

Subject Index

- Abrasives**
Is There Grit in Your Sludge?, 864
- Absenteeism**
Absenteeism in Construction Industry, 465
- Absorption**
Attenuation Versus Transparency, 78
- Reservoir Bottom Absorption Effects in Earthquake Response of Concrete Gravity Dams, 505
- Acceleration**
Seismic Stability of Gentle Infinite Slopes, 270
- Accident data**
Large Trucks in Urban Areas: A Safety Problem?, 692
- Accounting**
Accounting for CADD Center Costs, 934
- Construction Cost Control, 966
- Accuracy**
Relative Error Analysis of Geodetic Networks, 660
- Acetate**
Performance of Expanded-Bed Methanogenic Reactor, 79
- Acid rain**
Deterministic Linear Programming Model for Acid Rain Abatement, 56
- Effect of Ambient Air Quality on Throughfall Acidity, 72
- Acidic water**
Impact of Lake Acidification on Stratification, 101
- Activated carbon**
Adsorption of Organic Vapors on Carbon and Resin, 81
- External Mass-Transfer Rate in Fixed-Bed Adsorption, 106
- Performance of Expanded-Bed Methanogenic Reactor, 79
- Activated carbon treatment**
Carbon Columns: Success at Last, 842
- Removal of Radon from Water Supplies, 83
- Activated sludge process**
Performance of Surface Rotors in an Oxidation Ditch, 54
- Active control**
Active Control of Seismic-Excited Buildings, 606
- Control of Lateral-Torsional Motion of Wind-Excited Buildings, 172
- Optimization Issues in the Design and Control of Large Space Structures, 999
- Active earth pressure**
Active Earth Pressure Behind Retaining Walls, 257
- The Arch in Soil Arching, 251
- Dynamic Soil and Water Pressures of Submerged Soils, 297
- Adhesive bonding**
- Axial Strength of Grouted Pile-to-Sleeve Connections, 526
- A Method for Finding Engineering Properties of Sealants, 177
- Test Evaluation of Composite Beam Design Method, 477
- Adirondack Mountains**
Effect of Ambient Air Quality on Throughfall Acidity, 72
- Administration**
Managing the Transition to CADD, 457
- Admixtures**
Hazardous Waste Disposal as Concrete Admixture, 77
- Adsorption**
I-D Pollutant Migration in Soils of Finite Depth, 261
- Adsorption of Organic Vapors on Carbon and Resin, 81
- External Mass-Transfer Rate in Fixed-Bed Adsorption, 106
- Model for Moving Media Reactor Performance, 89
- Removal of Radon from Water Supplies, 83
- Aeration**
Performance of Surface Rotors in an Oxidation Ditch, 54
- Stream Dissolved Oxygen Analysis and Control, 70
- Aerial photographs**
An Analytical Method of Traffic Flow Using Aerial Photographs, 697
- Aerodynamic forces**
Dynamic Response of Tall Building to Wind Excitation, 521
- Aerodynamics**
Mathematical Model to Predict 3-D Wind Loading on Building, 141
- Radial Turbulent Flow Between Parallel Plates, 359
- Wind Load Effects on Flat Plate Solar Collectors, 491
- Africa**
Irrigation Water Requirements for Senegal River Basin, 435
- Age factors**
Triple Power Law for Concrete Creep, 130
- Aggregate gradation**
Optimization Model for Aggregate Blending, 34
- Stochastic Priority Model for Aggregate Blending, 43
- Aggregates**
Micropile Model for Progressive Fracture of Concrete and Rock, 159
- Optimization Model for Aggregate Blending, 34
- Overview of Skid Resistance on Ohio Pavements, 709
- Agricultural economics**

- Agricultural Benefits for Senegal River Basin, 422
Air classifiers
Separation of Solid Waste With Pulsed Airflow, 102
Air flow
A Space Age Test Center, 888
Air pollution
Horizontal Elutriator Preliminary Test Results under Nonstill Air Conditions, 60
 NO_x Exposure from Vehicles and Gas Stoves, 718
Air pollution control
CPM Harnesses Mammoth Powerplant Job, 836
Air quality
CPM Harnesses Mammoth Powerplant Job, 836
Effect of Ambient Air Quality on Throughfall Acidity, 72
Environmental Engineering, 980
Air scour
Fundamentals and Theory of Air Scour, 11
Air supported structures
The Stability of Cylindrical Air-Supported Structures, 220
Air transportation
Examining Air Travel Demand Using Time Series Data, 679
Transportation Requirements for High Technology Industrial Development, 703
Airfields
Managing Construction of Israeli Air Bases in Negev—A Personal Perspective, 469
Airport construction
Design, Construction and Maintenance of Torrijos Airport, 681
Managing Construction of Israeli Air Bases in Negev—A Personal Perspective, 469
Airport design
Design, Construction and Maintenance of Torrijos Airport, 681
LAX Engineers Beat the Clock, 892
Airport runways
Design, Construction and Maintenance of Torrijos Airport, 681
Algae
Nitrogenous Wastewater Treatment by Activated Algae, 53
Algal control
Phosphorus Reduction for Control of Algae, 86
Algorithms
Algorithm for Mixing Problems in Water Systems, 329
Appropriate Forms in Nonlinear Analysis, 201
Calculating Effectiveness of Water Conservation Measures, 61
Distortions Associated with Random Sea Simulators, 800
Frame Moments with the Takabeya Method, 844
Strain Softening with Creep and Exponential Algorithm, 149
Vibrating Nonuniform Plates on Elastic Founda-
- tion, 199
Alluvial channels
Analysis and Simulation of Low Flow Hydraulics, 408
Bed Topography in Bends of Sand-Silt Rivers, 405
Compilation of Alluvial Channel Data, 387
Design of Stable Alluvial Canals in a System, 415
Fluid and Sediment Interaction over a Plane Bed, 371
Formation of Alternate Bars, 406
Hydrodynamically Smooth Flows Over Surface Material in Alluvial Channels, 407
Inflow Seepage Influence on Straight Alluvial Channels, 388
Modeling of Unsteady Flows in Alluvial Streams, 332
Salt River Channelization Project: Model Study, 333
Water and Sediment Routing Through Curved Channels, 356
Alluvial streams
Prediction of 2-D Bed Topography in Rivers, 391
River Morphology and Thresholds, 347
Streampbank Stability, 267
Altimeters
Terrain Profiling Using Seasat Radar Altimeter, 661
Ambient air quality
Effect of Ambient Air Quality on Throughfall Acidity, 72
Anaerobic digestion
Conditioning of Anaerobically Digested Sludge, 82
Anaerobic filters
Performance of Expanded-Bed Methanogenic Reactor, 79
Analysis
Portables Pay Off, 932
Analytical techniques
Active Earth Pressure Behind Retaining Walls, 257
Analysis of Plates on a Kerr Foundation Model, 210
An Analytical Method of Traffic Flow Using Aerial Photographs, 697
Axisymmetrical Vibrations of Tanks—Analytical, 146
Laminar Flow in Conduits of Unconventional Shape, 171
Threshold Effects on Sediment Transport by Waves, 783
Anchorage
Empirical Study of Bar Development Behavior, 482
Anchors
Evaluation of Design Methods for Vertical Anchor Plates, 262
Uplift Behavior of Anchor Foundations in Soil, 1022
Anisotropic soils
Dispersion in Anisotropic, Homogeneous, Porous Media, 365
Anisotropy

SUBJECT INDEX

Axial loads

- Cyclic Behavior of Pavement Base Materials, 234
Design Strengths for an Offshore Clay, 253
Hydraulic Conductivity Tests on Compacted Clay, 260
New Method for Evaluating Liquefaction Potential, 239
Stress Anisotropy Effects on Clay Strength, 254
- Antecedent precipitation**
Runoff Probability, Storm Depth, and Curve Numbers, 440
- Antitrust laws**
Bid-Rigging: An Inside Story, 855
- Approximation methods**
Optimum Design of Trusses with Buckling Constraints, 568
Steady-State Dynamic Analysis of Hysteretic Systems, 222
- Aprons**
Local Scour Downstream of an Apron, 403
- Aqueducts**
Optimal Operation of California Aqueduct, 740
- Aquifers**
Can We Save the Ogallala?, 906
Field Comparison of Three Mass Transport Models, 315
Numerical Determination of Aquifer Constants, 386
Saltwater Upconing in Unconfined Aquifers, 342
Simulation of Two-Fluid Response in Vicinity of Recovery Wells, 390
Transition Zone Width in Ground Water on Ocean Atolls, 357
Volumetric Approach to Type Curves in Leaky Aquifers, 345
- Arches**
The Arch in Soil Arching, 251
Limit State Analysis of Arch Segment, 557
- Arctic engineering**
Civil Engineering in the Arctic Offshore, 960
- Arid lands**
Chemical Reactions within Root Zone of Arid Zone Soils, 430
- Armor units**
Concrete Armor Unit Form Inventory, 808
Damage to Armor Units: Model Technique, 813
Riprap Stability Under Wave Action, 795
Scaling the Weight of Breakwater Armor Units, 798
Stability of Armor Units on Composite Slopes, 817
- Artificial intelligence**
Expert Systems for Construction Project Monitoring, 39
The High-Tech Civils, 928
- Artificial islands**
Civil Engineering in the Arctic Offshore, 960
- Asbestos cement**
Leaching of Tetrachloroethylene from Vinyl-Lined Pipe, 49
- ASCE Awards & Prizes**
- Discussion of: Unsteady Seepage Analysis of Wallace Dam, 4**
Filters for Silts and Clays, 9
Fundamentals and Theory of Air Scour, 11
Horizontal Response of Piles in Layered Soils, 5
Local Buckling of W Shape Columns and Beams, 8
Methods Used to Evaluate Highway Improvements, 2
Modeling Ground-Water Flow at Love Canal, New York, 16
Particles, Pretreatment, and Performance in Water Filtration-b*Environmental Engineering*, James C. O'Shaughnessy, ed., 1985, 13
Plate Instability for W Shapes, 7
Reinforced Concrete Pipe Columns: Behavior and Design, 10
Reinforced Embankments: Analysis and Design, 3
Reservoir Modeling to Develop AWT Nitrate Standard, 12
Segmental Post-Tensioned Dolphin at Tagrin Point, 15
State of the Art: Rock Tunneling-b*Tunnelling in Soil and Rock*, K.Y. Lo, ed., 1984, 14
Thaw Settlement Analysis for Buried Pipelines in Permafrost-b*Pipelines in Adverse Environments II*, Mark Pickell, ed., 1983, 1
Two-Equation Turbulence Model for Flow in Trenches, 6
- ASCE Outstanding Civil Engineering Bridging Twin Ports, 901**
- Asphalts**
Catalytic Modification of Road Asphalt by Polyethylene, 671
- Attenuation**
Attenuation Versus Transparency, 78
- Attitudes**
Liability: Attitudes and Procedures, 468
- Attrition**
Managing Productivity During an Attrition Program, 451
- Automation**
Automation and Robotics for Construction, 32
Design and Construction of Dade County METROMOVER, 725
- Auto-regressive moving-average model**
ARMA Representation of Random Processes, 152
- Axial compression**
Blowup of Concrete Pavements, 670
- Axial forces**
Design and Analysis of Silos for Friction Forces, 555
- Axial loads**
Axial Strength of Grouted Pile-to-Sleeve Connections, 526
Local Buckling of Hollow Structural Sections, 540
Probabilistic Basis for Design Criteria in Reinforced Concrete, 1001

- Axial strain** 556
Stability of Plane Frames Omitting Axial Strains, 612
- Backfills**
Dynamic Soil and Water Pressures of Submerged Soils, 297
- Backwashing**
Fundamentals and Theory of Air Scour, 11
- Backwater**
Analytical Diffusion Model for Flood Routing, 343
- Banding**
Test of Post-Tensioned Flat Plate with Banded Tendon, 589
- Barges**
Innovative Powerhouse Designs, 989
- Bars**
Empirical Study of Bar Development Behavior, 482
Instability of Thin Walled Bars, 180
Torsion of Composite Bars by Boundary Element Method, 200
Wave Propagation in a Strain-Softening Bar: Exact Solution, 148
- Bars, riverine**
Formation of Alternate Bars, 406
- Basins**
Simulator for Water Resources in Rural Basins, 375
- Bays**
A Method for Investigation of Steady State Wave Spectra in Bays, 801
- Beach erosion**
Field Data on Seaward Limit of Profile Change, 799
- Beam columns**
Inelastic Post-Buckling Behavior of Tubular Members, 593
Interactive Buckling in Thin-Walled Beam-Columns, 219
Plate Instability for W Shapes, 7
- Beams**
Analogy for Beam-Foundation Elastic Systems, 576
Analytical Modeling of Tube-In-Tube Structure, 552
Beam Analogy for Vertical Curves, 951
Beam on Generalized Two-Parameter Foundation, 165
Fiber Reinforced Beams Under Moment and Shear, 503
Fiber-Reinforced Concrete Deep Beams with Openings, 575
Flexure of Statically Indeterminate Cracked Beams, 223
Functions for Relating Steel-Sections Properties, 645
Local Buckling of W Shape Columns and Beams, 8
Minimum Cost Prestressed Concrete Beam Design, 626
Model for Beam-Mode Buckling of Buried Pipelines, 140
Moment Determination for Moving Load Systems,
- A Moment of Inertia Invariant, 587
Plastic Response of Cantilevers with Stable Cracks, 175
- Plate Instability for W Shapes, 7
Static and Fatigue Tests on Partially Prestressed Beams, 570
- Stiffness Matrix for Elastic-Softening Beams, 499
Torsion of Concrete Beams with Large Openings, 483
- Ultimate Load Behavior of Beams with Initial Imperfections, 550
Vibration of Tapered Beams, 471
- Beams, cantilever**
Concrete Fracture in CLWL Specimen, 162
- Beams, structural**
Lateral Stability of Beams with Elastic End Restraints, 155
- Beams, supports**
Flexural Behavior of Reinforced Soil Beams, 307
Rapid Exact Inelastic Biaxial Bending Analysis, 638
Transverse Stirrup Spacing in R/C Beams, 492
- Bearing capacity**
Bearing Capacity of Gravity Bases on Layered Soil, 272
Dimensioning Footings Subjected to Eccentric Loads, 269
Effect of Underground Void on Foundation Stability, 289
Punch-Through Instability of Jack-Up on Seabed, 264
Rigid-Plastic Analysis of Floating Plates, 174
Strain Path Method, 295
- Bed load**
Bed Load or Suspended Load, 321
Bed Topography in Bends of Sand-Silt Rivers, 405
Entrained and Bed-Load Sand Concentrations in Waves, 796
On the Determination of Ripple Geometry, 389
Sediment Transport under Ice Cover, 373
Transport of Suspended Material in Open Submerged Streams, 363
- Bed load movement**
Bed Material Movement in Hyperconcentrated Flow, 376
New Approach to Calibrating Bed Load Samplers, 358
Prediction of 2-D Bed Topography in Rivers, 391
- Bed material**
Characteristics of Free Surface Flow Over a Gravel Bed, 438
- Bed ripples**
On the Determination of Ripple Geometry, 389
- Bed roughness**
Estimating Mean Velocity in Mountain Rivers, 354
Hydrodynamically Smooth Flows Over Surface Material in Alluvial Channels, 407
Regime of Oscillatory Flow, 764
- Bedforms**

SUBJECT INDEX

- Geometry of Ripples and Dunes, 318
Sediment Transport under Ice Cover, 373
Behavior pipes
Analytical Theory for Buried Tube Postbuckling, 181
Bending
Effects of Shear and Normal Strain on Plate Bending, 195
Interactive Buckling in Thin-Walled Beam-Columns, 219
Nonlinear Analysis of Plates with Plastic Orthotropy, 609
Nonuniform Bending-Stress Distribution (Shear Lag), 639
Plate Deflections Using Orthogonal Polynomials, 208
Relative Reliability of Dimension Lumber in Bending, 592
Ultimate Load Behavior of Beams with Initial Imperfections, 550
Bending moments
Moment Determination for Moving Load Systems, 556
Multistory Frames Under Sequential Gravity Loads, 620
Benefit cost analysis
Application of Extreme Value Theory to Flood Damage, 756
Considering the Future in Public Works Planning, 109
Development of a Flood Management Plan, 753
Significance of Location in Computing Flood Damage, 730
Berths
Optimal Berth and Crane Combinations in Containerports, 829
Pier Review, 921
Biaxial bending
Rapid Exact Inelastic Biaxial Bending Analysis, 638
Biaxial loads
Biaxially Loaded L-Shaped Reinforced Concrete Columns, 633
Design Criteria for Box Columns Under Biaxial Loading, 637
Biaxial stresses
General Failure Criterion for Isotropic Media, 137
Biaxial tests
Biaxial Stress-Strain Relations for Brick Masonry, 539
Bibliographies
Selected Bibliography on Traffic Operations, 682
Bids
Bid-Rigging: An Inside Story, 855
Tender Evaluation by Fuzzy Sets, 35
Bifurcations
Snap-Through and Bifurcation in a Simple Structure, 179
Bins
Cold-Formed Steel Farm Structures Part I: Grain Bins, 600
Boundary shear
Design Pressures in Circular Bins, 581
Biofilm
Biofilm Growths with Sucrose as Substrate, 71
Unified Analysis of Biofilm Kinetics, 90
Biological treatment
Nitrogenous Wastewater Treatment by Activated Algae, 53
Blast effects
Design of Structures to Resist Nuclear Weapons Effects, 971
Blasting
Trench Effects on Blast-Induced Pipeline Stresses, 299
Vibration Criteria for Historic Buildings, 33
Vibration Problems in Geotechnical Engineering, 1023
Bolts
Eccentrically Loaded High Strength Bolted Connections, 534
End-Bolted Cover Plates, 547
Bond stress
New Finite Element for Bond-Slip Analysis, 565
Border irrigation
Reuse System Design for Border Irrigation, 426
Boring
Unearthing Mt. Baker Tunnel, 946
Bottom ash
Revegetation Using Coal Ash Mixtures, 85
Boulders
Estimating Mean Velocity in Mountain Rivers, 354
Boundaries, property
The Surveyor and Written Boundary Agreements, 662
Boundary conditions
Analytical Diffusion Model for Flood Routing, 343
Finite Element Modeling of Infinite Reservoirs, 218
Open Boundary Condition for Circulation Models, 331
Stability of Continuously Restrained Cantilevers, 217
Boundary element method
Boundary Element Calculations of Diffusion Equation, 144
Shallow Trenches and Propagation of Surface Waves, 142
Torsion of Composite Bars by Boundary Element Method, 200
Boundary element methods
Wave-Induced Forces on Buried Pipeline, 792
Boundary layer flow
Hydrodynamically Smooth Flows Over Surface Material in Alluvial Channels, 407
Boundary shear
Boundary Shear in Smooth Rectangular Ducts, 317
Distribution of Suspended Sediment in Large Waves, 828
Flow Distribution in Compound Channels, 338
Radial Turbulent Flow Between Parallel Plates, 359

Boundary shear

Structure of Turbulence in Compound Channel Flows, 394

Boundary value problems

Dynamics of Internal Waves in Cylindrical Tank, 788

Simulation of Two-Fluid Response in Vicinity of Recovery Wells, 390

Box beams

Nonuniform Bending-Stress Distribution (Shear Lag), 639

Box columns

Design Criteria for Box Columns Under Biaxial Loading, 637

Local Instability Tests of Plate Elements under Cyclic Uniaxial Loading, 537

Bracing

Composite Box Girder Bridge Behavior During Construction, 507

Cyclic Out-of-Plane Buckling of Double-Angle Bracing, 542

Design of a Seismic-Resistant Friction-Braced Frame, 643

Design of Diagonal Roof Bracing Rods and Tubes, 538

Seismic Response of RC Frames with Steel Braces, 604

Tests of Full-Size Gusset Plate Connections, 513

Breaking waves

Qualitative Description of Wave Breaking, 770

Breakwaters

Damage to Armor Units: Model Technique, 813

Design Strengths for an Offshore Clay, 253

A Harbor Ray Model of Wave Refraction-Difraction, 760

Riprap Stability Under Wave Action, 795

Wave Statistical Uncertainties and Design of Breakwater, 820

Brick masonry

Biaxial Stress-Strain Relations for Brick Masonry, 539

New Analysis Techniques for Structural Masonry, 996

Bridge approaches

Use of NDT and Pocket Computers in Pavement Evaluation, 688

Bridge construction

Bridging Twin Ports, 901

Record Bridge Replacement, 898

Bridge decks

Clearing the Decks, 922

Curved Bridge Decks: Analytical Strip Solution, 564

Jointless Bridge Decks, 945

A Road to Recovery, 876

Timber Bridge Decks, 869

Bridge design

Approximations for Moments in Box Girders, 617

Bridging Twin Ports, 901

Floating Bridge for 100 Year Storm, 883

1985 ASCE TRANSACTIONS

Jointless Bridge Decks, 945

Lift Bridge Looks Like Sculpture, 861

New Cables for Old, 925

Record Bridge Replacement, 898

Who Should Design Bridges?, 903

Bridge towers

Ambient Vibration Studies of Golden Gate Bridge

I: Pier-Tower Structure, 154

Lift Bridge Looks Like Sculpture, 861

Bridges

Length-Thermal Stress Relations for Composite Bridges, 520

Research Needs Related to the Nation's Infrastructure, 1006

State-of-the-Art Report on Redundant Bridge Systems, 629

Bridges, box girder

Approximations for Moments in Box Girders, 617

China Builds Record Bridge, 847

Composite Box Girder Bridge Behavior During Construction, 507

Bridges, cable-stayed

Effect of Cable Stiffness on Cable-Stayed Bridges, 596

Bridges, concrete

Approximations for Moments in Box Girders, 617

Variability in Long-Term Concrete Deformations, 583

Bridges, continuous

Collapse Loads of Continuous Orthotropic Bridges, 585

Bridges, girder

Design of Slender Webs Having Rectangular Holes, 519

End-Bolted Cover Plates, 547

Shear Lag Analysis and Effective Width of Curved Girder Bridges, 131

Bridges, highway

Impact Studies on Small Composite Girder Bridge, 511

Markov Renewal Model for Maximum Bridge Loading, 192

Bridges, lift

Lift Bridge Looks Like Sculpture, 861

Bridges, long span

China Builds Record Bridge, 847

Bridges, orthotropic

Collapse Loads of Continuous Orthotropic Bridges, 585

Bridges, piers

Ambient Vibration Studies of Golden Gate Bridge

I: Pier-Tower Structure, 154

Effect of Pier Spacing on Scour Around Bridge Piers, 385

Scour at Cylindrical Bridge Piers in Armored Beds, 360

Bridges, railroad

SUBJECT INDEX

China Builds Record Bridge, 847
Frequency of Railway Bridge Damage, 572
Impact in Truss Bridge Due to Freight Trains, 135
Tunneling a Bridge, 937
Bridges, spans
Length-Thermal Stress Relations for Composite Bridges, 520
Bridges, steel
Advances in Short Span Steel Bridges, 938
Calibration of Bridge Fatigue Design Model, 548
China Builds Record Bridge, 847
Hundreds of Bridges—Thousands of Cracks, 865
Bridges, suspension
Ambient Vibration Studies of Golden Gate Bridge I: Suspended Structure, 153
Ambient Vibration Studies of Golden Gate Bridge II: Pier-Tower Structure, 154
New Cables for Old, 925
Bridges, wooden
Timber Bridge Decks, 869
Brittle failure
Limit State Analysis of Arch Segment, 557
Brittle fractures
Micropalne Model for Progressive Fracture of Concrete and Rock, 159
Buckling
Analytical Theory for Buried Tube Postbuckling, 181
Behavior of Columns with Pretensioned Stays, 531
Blowup of Concrete Pavements, 670
Buckling Analysis of FRP-Faced Anisotropic Cylindrical Sandwich Panel, 157
Buckling of Orthotropic Cylinders due to Wind Load, 161
Buckling with Enforced Axis of Twist, 224
Collapse of Thick Wall Pipe in Ultra Deep Water, 704
Connection Flexibility and Steel Frames, 965
Cyclic Out-of-Plane Buckling of Double-Angle Bracing, 542
Design of Slender Webs Having Rectangular Holes, 519
Distortional Buckling of Steel Storage Rack Columns, 644
Effect of Support Conditions on Plate Strengths, 480
Inelastic Buckling of Steel Plates, 475
Inelastic Cyclic Analysis of Imperfect Columns, 546
Interaction of Plastic Local and Lateral Buckling, 607
Interactive Buckling in Thin-Walled Beam-Columns, 219
Lateral Stability of Beams with Elastic End Restraints, 155
Linear Stress Analysis of Torospherical Head, 207
Local Buckling of Hollow Structural Sections, 540
Local Buckling of W Shape Columns and Beams, 8
Model for Beam-Mode Buckling of Buried Pipelines, 140
Nonlinear Effects in Creep Buckling Analysis of

Buried structures

Columns, 170
Optimum Design of Trusses with Buckling Constraints, 568
Partial Moment Redistribution in Cold-Formed Steel, 544
Partial Stress Redistribution in Cold-Formed Steel, 543
Plate Instability for W Shapes, 7
Repair Technique for Buckled Wood Truss Members, 530
Snap-Through and Bifurcation in a Simple Structure, 179
Sparsely Connected Built-Up Columns, 509
Stability of Continuously Restrained Cantilevers, 217
Symmetric Buckling of Hinged Ring Under External Pressure, 215
Building codes
Drift Snow Loads on Multilevel Roofs, 488
Hurricane Alicia: One Year Later, 986
Hurricane Damage on Galveston's West Beach, 595
Building design
The Engineering Aesthetics of Tall Buildings, 978
Get Involved with Cladding Design, 885
Optimum Building Design for Forced-Mode Compliance, 197
Buildings
Mathematical Model to Predict 3-D Wind Loading on Building, 141
Rehabilitation, Renovation, and Reconstruction of Buildings, 1005
Robotics in Building Construction, 37
Seismic Damage Analysis of Reinforced Concrete Buildings, 517
Structural Performance and Wind Speed-Damage Correlation in Hurricane Alicia, 634
Buildings, residential
Indicator of Residential Roof Strength in Wind, 599
Light-Frame Shear Wall Length and Opening Effects, 610
Buoyancy
Errors from Using Conservation of Buoyancy Concept in Plume Computations, 377
Buoyant jets
Surface Buoyant Jets in Steady and Reversing Crossflows, 364
Buried pipes
Effects of Vehicles on Buried, High-Pressure Pipe, 685
Lateral Force-Displacement Response of Buried Pipe, 293
Model for Beam-Mode Buckling of Buried Pipelines, 140
Thaw Settlement Analysis for Buried Pipelines in Permafrost**b**Pipelines in Adverse Environments II, Mark Pickell, ed., 1983, 1
Uplift Force-Displacement Response of Buried Pipe, 292
Wave-Induced Forces on Buried Pipeline, 792
Buried structures
Dynamic Stresses and Displacements in a Buried

- Tunnel, 139
- Burned pipes**
- Advances in Underground Pipeline Engineering, 956
- Bus usage**
- Generating a Bus Route O-D Matrix From On-Off Data, 712
- Performance Measures for New York State Inter-city Buses, 706
- Vehicle Pooling in Transit Operations, 689
- Business districts**
- Acceptable Walking Distances in Central Areas, 696
- Pedestrian Traffic on Cincinnati Skywalk System, 674
- Urban Transportation Impacts of Tall Buildings, 698
- Cables**
- Effect of Cable Stiffness on Cable-Stayed Bridges, 596
- New Cables for Old, 925
- Caissons**
- Drilled Piers and Caissons II, 976
- Wave-Induced Pressure under Gravity Structure, 765
- Calcium sulfate**
- Calcium Sulfate Solubility in Organic-Laden Wastewater, 69
- Calibration**
- Flux Use for Calibrating and Validating Models, 66
- New Approach to Calibrating Bed Load Samplers, 358
- California**
- Optimal Operation of California Aqueduct, 740
- Predicted Extreme High Tides for California: 1983-2000, 809
- Canada**
- Land Information Management: A Canadian Perspective, 657
- Canal design**
- Design of Stable Alluvial Canals in a System, 415
- Canal linings**
- Plastic Lining on Riverton Unit, Wyoming, 437
- Two Projects Became One, 912
- Canals**
- Design of Stable Alluvial Canals in a System, 415
- Cantilevers**
- Buckling with Enforced Axis of Twist, 224
- Plastic Response of Cantilevers with Stable Cracks, 175
- Stability of Continuously Restrained Cantilevers, 217
- Capacity**
- Capacity Expansion of Sao Paulo Water Supply, 741
- Pricing and Expansion of a Water Supply System, 727
- Capital costs**
- User-Pay Funding and Creative Capital Financing, 113
- Carbon columns**
- Carbon Columns: Success at Last, 842
- Careers**
- Changing Jobs Successfully, 835
- Development of an Engineering Manager, 450
- Case reports**
- Construction QA/QC Systems that Work: Case Studies, 967
- Design and Construction of Dade County METROMOVER, 725
- Foundation Densification for Fossil Plant Loads, 226
- Large Basin Deterministic Hydrology: A Case Study, 393
- Putting CADD to Work, 929
- Solutions in the Pipeline, 919
- Spatially Varying Rainfall and Floodrisk Analysis, 362
- A Tale of Two Cities: Light Rail Transit in Canada, 715
- Uplift Behavior of Anchor Foundations in Soil, 1022
- Water and Sediment Routing Through Curved Channels, 356
- Cathodic protection**
- Clearing the Decks, 922
- Causeways**
- Beach Evolution Caused by Littoral Drift Barrier, 802
- Cavities**
- Circulation Structure in a Stratified Cavity Flow, 337
- Cellular structures**
- Finite Element Analyses of Lock and Dam 26 Cofferdam, 263
- Vibrational Characteristics of Multi-Cellular Structures, 559
- Cement grouts**
- Issues in Dam Grouting, 991
- Cements**
- Structural Design, Cementitious Products, and Case Histories, 1016
- Testing of Cement-Mortar Lined Carbon Steel Pipes, 669
- Centrifuge model**
- Dynamic Centrifugal Modeling of a Horizontal Dry Sand Layer, 250
- Evaluation of Design Methods for Vertical Anchor Plates, 262
- Change orders**
- Configuration Management as Applied to Engineering Projects, 462
- Construction Claims: Frequency and Severity, 22
- Channel beds**
- Geometry of Ripples and Dunes, 318
- Channel bends**
- Bed Topography in Bends of Sand-Silt Rivers, 405

SUBJECT INDEX

- Water and Sediment Routing Through Curved Channels, 356
Water Surface at Change of Channel Curvature, 369
- Channel design**
Deep-Draft Navigation Project Design, 759
- Channel erosion**
Salt River Channelization Project: Model Study, 333
- Channel flow**
B-Jumps at Abrupt Channel Drops, 368
Modeling of Flow Velocity Using Weirs, 320
Structure of Turbulence in Compound Channel Flows, 394
- Channel morphology**
Channel Width Adjustment During Scour and Fill, 402
River Morphology and Thresholds, 347
- Channel stabilization**
Erosion Risk Analysis for a Southwestern Arroyo, 720
A Tale of Six Cities, 866
- Channelization**
Salt River Channelization Project: Model Study, 333
- Channels, waterways**
Analytical Diffusion Model for Flood Routing, 343
Boundary Shear in Smooth Rectangular Ducts, 317
Deep-Draft Navigation Project Design, 759
Flow Distribution in Compound Channels, 338
Modeling of Flow Velocity Using Weirs, 320
- Chemical grouting**
Chemical Grouting in Soils Permeated by Water, 282
Issues in Dam Grouting, 991
- Chemical reactions**
Cay Clay Liners Work?, 860
- Chemical wastes**
Ground-Water Contamination in Silicon Valley, 749
- Circular channels**
Flow Over Side Weirs in Circular Channels, 325
- Circulation**
Open Boundary Condition for Circulation Models, 331
- Civil engineering**
1984 Civil Engineering Educators Salary Survey, 122
Engineering Education: An Update, 904
- Civil engineers**
The High-Tech Civils, 928
Oral History: Saving the Past, 852
- Cladding**
Get Involved with Cladding Design, 885
Glass Strength Degradation under Fluctuating Loads, 560
- Claims**
- Coastal engineering**
Avoiding Contract Disputes, 958
How Designers Can Avoid Construction Claims, 119
- Clay liners**
1-D Pollutant Migration in Soils of Finite Depth, 261
Cay Clay Liners Work?, 860
Clay Liner Permeability: Evaluation and Variation, 300
Hydraulic Conductivity of Two Prototype Clay Liners, 286
- Clay minerals**
Phosphogypsum Waste Anion Removal by Soil Minerals, 93
- Clays**
1-D Pollutant Migration in Soils of Finite Depth, 261
Comparison of Natural and Remolded Plastic Clay, 280
Design Strengths for an Offshore Clay, 253
Evaluation of Soil Response to EPB Shield Tunneling, 243
Filters for Silts and Clays, 9
Hydraulic Conductivity Tests on Compacted Clay, 260
Model for Piping-Plugging in Earthen Structures, 278
Moisture Curve of Compacted Clay: Mercury Intrusion Method, 296
Settlement Analysis of Embankments on Soft Clays, 259
Strain Path Method, 295
Stress Anisotropy Effects on Clay Strength, 254
Uncertainty of One-Dimensional Consolidation Analysis, 312
- Client relationships**
The Client Relationship: Effective Marketing Steps, 446
- Climatic data**
Irrigation Water Requirements for Senegal River Basin, 435
- Climatology**
Automated Remote Recording and Analysis of Coastal Data, 784
- Closed conduit flow**
Control Valve Flow Coefficients, 695
- Closed loop systems**
Active Control of Seismic-Excited Buildings, 606
- Coal fired power plants**
Solid Waste Management for Utility Reconvalescences, 229
- CPM Harnesses Mammoth Powerplant Job, 836**
- Coastal engineering**
Automated Remote Recording and Analysis of Coastal Data, 784
Coastal Zone '85, 961
A Fifth-Order Stokes Theory for Steady Waves, 773
Hydraulics and Hydrology in the Small Computer Age, 987
Nineteenth Coastal Engineering Conference: Pro-

- ceedings of the International Conference, 997
- Coastal processes**
- Coastal Zone '85, 961
- Nineteenth Coastal Engineering Conference: Proceedings of the International Conference, 997
- Sea Level Rise Effects on Shoreline Position, 824
- Coastal structures**
- 3-D Model of Bathymetric Response to Structures, 769
- Beach Evolution Caused by Littoral Drift Barrier, 802
- Nineteenth Coastal Engineering Conference: Proceedings of the International Conference, 997
- Sea Level Rise Effects on Shoreline Position, 824
- Significant Wave Height for Shallow Water Design, 814
- Wave Runup Formulas for Smooth Slopes, 767
- Codes**
- Research Needs for Infrastructure Management, 723
- Coefficients**
- Hydrodynamic Coefficients and Depth Parameter, 766
- Cofferdams**
- Finite Element Analyses of Lock and Dam 26 Cofferdam, 263
- Cohesionless soils**
- Chemical Grouting in Soils Permeated by Water, 282
- Liquefaction Potential Mapping for San Francisco, 237
- Cohesive sediment**
- Erosion of Soft Cohesive Sediment Deposits, 398
- Cohesive soils**
- Flow Field Around Cones in Steady Penetration, 246
- Loading Rate Method for Pile Response in Clay, 252
- Cold regions**
- Foundations in Permafrost and Seasonal Frost, 983
- Thermal Design Considerations in Frozen Ground Engineering, 1019
- Cold weather construction**
- Climatic Effects on Construction, 27
- Cold-formed steel**
- Cold-Formed Steel Farm Structures Part I: Grain Bins, 600
- Cold-Formed Steel Farm Structures Part II: Barrel Shells, 601
- Design of Cold-Formed Latticed Transmission Towers, 624
- Partial Moment Redistribution in Cold-Formed Steel, 544
- Partial Stress Redistribution in Cold-Formed Steel, 543
- Transmission Towers: Design of Cold-Formed Angles, 584
- Z-Section Girts Under Negative Loading, 504
- Collapse**
- Collapse of Plate Girders with Inclined Stiffeners, 494
- Collapse of SDOF System to Harmonic Excitation, 151
- Collapse of Square PSC Slabs with Corner Restraint, 489
- Collapse load**
- Collapse Loads of Continuous Orthotropic Bridges, 585
- Elastic-Plastic-Softening Analysis of Plane Frames, 525
- Flexural Limit Design of Column Footings, 613
- Color**
- Development of Color Pavement in Korea, 691
- Columns**
- Biaxially Loaded L-Shaped Reinforced Concrete Columns, 633
- Confinement Effectiveness of Crossties in RC, 602
- Direct Biaxial Design of Columns, 479
- Dynamic Instability Analyses of Axially Impacted Columns, 178
- Dynamic Lateral-Load Tests of R/C Column-Slabs, 514
- Effective Length of Columns in Steel Radial Gates, 621
- Flexural Limit Design of Column Footings, 613
- Functions for Relating Steel-Sections Properties, 645
- Local Buckling of W Shape Columns and Beams, 8
- Nonlinear Effects in Creep Buckling Analysis of Columns, 170
- Plate Instability for W Shapes, 7
- Reinforced Concrete Pipe Columns: Behavior and Design, 10
- Wharf Stands on Stone Columns, 834
- Columns, restrained**
- Imperfect Columns with Biaxial Partial Restraints, 518
- Columns, supports**
- Behavior of Columns with Pretensioned Stays, 531
- Distortional Buckling of Steel Storage Rack Columns, 644
- Sparingly Connected Built-Up Columns, 509
- Test of Four-Panel Post-Tensioned Flat Plate, 590
- Combined stress**
- Extreme-Value Statistics for Nonlinear Stress Combination, 194
- Commercial shellfish**
- Shrimp Farm Made Feasible, 897
- Communication**
- Computers and Group Communications: The Law: Forum Experiment, 652
- Communication cables**
- Local Area Networks, 654
- Communication skills**
- Negotiating Contracts, 941
- Negotiation and Contract Management, 995
- Communication systems**
- BITNET: Inter-University Computer Network, 653
- Community development**

SUBJECT INDEX

- Estimating Rural and Urban Infrastructure Needs, 114
Compaction
Compaction Characteristics of River Terrace Gravel, 288
Foundation Densification for Fossil Plant Loads, 226
Hydraulic Conductivity Tests on Compacted Clay, 260
Vibration Problems in Geotechnical Engineering, 1023
Competitive bidding
Bid-Rigging: An Inside Story, 855
Design Flexibility Cuts Costs, 838
Fair and Reasonable Markup (FaRM) Pricing Model, 44
Compliance
Flexure of Statically Indeterminate Cracked Beams, 223
Composite beams
Composite Beam Design Using Interaction Diagram, 528
Test Evaluation of Composite Beam Design Method, 477
Composite masonry
New Analysis Techniques for Structural Masonry, 996
Composite materials
Continuum Damage Mechanics of Fiber Reinforced Concrete, 185
Composite structures
Analysis of Two-Way Acting Composite Slabs, 470
Buckling Analysis of FRP-Faced Anisotropic Cylindrical Sandwich Panel, 157
Composite and Mixed Construction, 962
Composite Box Girder Bridge Behavior During Construction, 507
Direct Model Test of Stub Girder Floor System, 563
Friction Coefficient of Steel on Concrete or Grout, 502
Length-Thermal Stress Relations for Composite Bridges, 520
Mixed Use, Mixed Materials, 850
Mixing Steel and Concrete, 851
Standard: Specifications for the Design and Construction of Composite Slabs and Commentary on Specifications for the Design and Construction of Composite Slabs, 1014
Compressibility
Comparison of Natural and Remolded Plastic Clay, 280
Settlement Analysis of Embankments on Soft Clays, 259
Settlement Analysis of Skirted Granular Piles, 303
Compression
Constitutive Model for Concrete in Cyclic Compression, 173
Compressive strength
General Failure Criterion for Isotropic Media, 137
Mechanics of Masonry in Compression, 524
Strength of Intact Geomechanical Materials, 273
Computer aided drafting (CAD)
Accounting for CADD Center Costs, 934
Application of Small Computers in Construction, 31
Checking Off CADD Priorities, 871
The High-Tech Civils, 928
Managing Computers, 993
Managing the Transition to CADD, 457
Micro-CAD: Can It Pay for Itself, 927
Micro-CAD Systems: A Dream Come True, 880
Putting CADD to Work, 929
Computer analysis
Frame Moments with the Takabeya Method, 844
Computer applications
Application of Small Computers in Construction, 31
BITNET: Inter-University Computer Network, 653
Computer Applications in Water Resources, 963
Computer Programming in the Civil Engineering Curriculum, 124
Computers and Group Communications: The Law: Forum Experiment, 652
Construction Cost Control, 966
The High-Tech Civils, 928
Hydraulics and Hydrology in the Small Computer Age, 987
Managing Computers, 993
Subregion Iteration of Finite Element Method for Large-Field Problems of Ground-Water Solute Transport, 350
Computer graphics
Computer Animation of Storm Surge Predictions, 334
Computer hardware
Checking Off CADD Priorities, 871
Computer languages
The High-Tech Civils, 928
Computer models
Computer Keeps New Orleans: Head Above Water, 911
Construction Load Analysis for Concrete Structures, 535
Construction Research Applied to Practice, 968
Danger: Natural System Modeled by Computer, 908
Generalized Water Surface Profile Computations, 340
Inelastic Post-Buckling Behavior of Tubular Members, 593
Modeling Ground-Water Flow at Love Canal, New York, 16
Modeling of Unsteady Flows in Alluvial Streams, 332
Rock Masses: Modeling of Underground Openings/Probability of Slope Failure/Fracture of Intact Rock, 1008
SIREN: A Repetitive Construction Simulation Model, 40
Computer programming

- Computer Programming in the Civil Engineering Curriculum, 124
- Frame Moments with the Takabeya Method, 844
- LOGO as an Introduction to FORTRAN Programming, 121
- Computer programming languages**
- LOGO as an Introduction to FORTRAN Programming, 121
- Computer programs**
- Critical Load Program, 874
- Determination of Urban Flood Damages, 743
- Minimum Cost Prestressed Concrete Beam Design, 626
- Computer software**
- Checking Off CADD Priorities, 871
- Computers Aren't Infallible, 926
- KERMIT Protocol for Inter-Computer Data Transfer, 655
- Making Project Control Systems Work, 992
- Managing Computers, 993
- The Microcomputer in C.E. Education: A Survey, 665
- Project Management on a Micro, 931
- Putting CADD to Work, 929
- Computerized design**
- Application of Small Computers in Construction, 31
- Checking Off CADD Priorities, 871
- Design of a Seismic-Resistant Friction-Braced Frame, 643
- Managing the Transition to CADD, 457
- Micro-CAD Systems: A Dream Come True, 880
- Computerized routing**
- Transmission Corridor Location Modeling, 676
- Computerized simulation**
- Construction Research Applied to Practice, 968
- Distortions Associated with Random Sea Simulators, 800
- Furrow Irrigation Simulation Time Reduction, 424
- Power Production and Air Conditioning by Solar Ponds, 228
- Residence Time in Stormwater Detention Basins, 55
- A Simulation Model to Forecast Project Completion Time, 41
- Computers**
- Distributed Data Bases for Surveying, 656
- Role of Telecommunications in Timekeeping, 651
- Concentrated loads**
- Collapse of Square PSC Slabs with Corner Restraint, 489
- The Stability of Cylindrical Air-Supported Structures, 220
- Concrete**
- Bounding Surface Plasticity Model for Concrete, 147
- Catalytic Modification of Road Asphalt by Polyethylene, 671
- Concrete Fracture in CLWL Specimen, 162
- Constitutive Model for Concrete in Cyclic Com-
- pression, 173
- Constitutive Model for Loading of Concrete, 506
- Hazardous Waste Disposal as Concrete Admixture, 77
- Microplane Model for Progressive Fracture of Concrete and Rock, 159
- Mixing Steel and Concrete, 851
- Standard: Specifications for the Design and Construction of Composite Slabs and Commentary on Specifications for the Design and Construction of Composite Slabs, 1014
- Structural Design, Cementitious Products, and Case Histories, 1016
- Third-Variant Plasticity Theory for Low-Strength Concrete, 158
- Triple Power Law for Concrete Creep, 130
- Two Parameter Fracture Model for Concrete, 202
- Concrete additives**
- New Ways with Concrete, 868
- Concrete construction**
- Construction Load Analysis for Concrete Structures, 535
- Concrete deformation**
- Partially Prestressed Concrete Structures, 586
- Variability in Long-Term Concrete Deformations, 583
- Concrete pavements**
- Biggest Highway Rebuild, 889
- Blowup of Concrete Pavements, 670
- Concrete pipes**
- Advances in Underground Pipeline Engineering, 956
- Concrete, post-tensioned**
- Test of Four-Panel Post-Tensioned Flat Plate, 590
- Concrete, precast**
- Minimum Cost Prestressed Concrete Beam Design, 626
- Concrete, prestressed**
- Collapse of Square PSC Slabs with Corner Restraint, 489
- Composite Beam Design Using Interaction Diagram, 528
- Minimum Cost Prestressed Concrete Beam Design, 626
- Partially Prestressed Concrete Structures, 586
- Segmental Post-Tensioned Dolphin at Tagrin Point, 15
- Test of Four-Panel Post-Tensioned Flat Plate, 590
- Concrete, reinforced**
- Analysis of Two-Way Acting Composite Slabs, 470
- Biaxially Loaded L-Shaped Reinforced Concrete Columns, 633
- Composite and Mixed Construction, 962
- Confinement Effectiveness of Crossties in RC, 602
- Construction Load Analysis for Concrete Structures, 535
- Containments for Limerick and Susquehanna Plants, 230
- Continuum Damage Mechanics of Fiber Reinforced Concrete, 185

SUBJECT INDEX

- Direct Biaxial Design of Columns, 479
Dynamic Lateral-Load Tests of R/C Column-Slabs, 514
Elastic-Plastic-Softening Analysis of Plane Frames, 525
Empirical Study of Bar Development Behavior, 482
Extensional Stiffness of Precracked R/C Panels, 501
Fiber Reinforced Beams Under Moment and Shear, 503
Fiber-Reinforced Concrete Deep Beams with Openings, 575
Impulsive Direct Shear Failure in RC Slabs, 574
Mechanistic Seismic Damage Model for Reinforced Concrete, 516
New Finite Element for Bond-Slip Analysis, 565
On Minimum Reinforcement in Concrete Structures, 646
Probabilistic Basis for Design Criteria in Reinforced Concrete, 1001
RC Structural Walls: Seismic Design for Shear, 582
Reinforced Concrete Pipe Columns: Behavior and Design, 10
Seismic Damage Analysis of Reinforced Concrete Buildings, 517
Seismic Response of RC Frames with Steel Braces, 604
Shear Modulus of Precracked R/C Panels, 487
Slurry Walls Protect Harvard Square, 948
Stiffness Matrix for Elastic-Softening Beams, 499
Timoshenko Beams with Rotational End Constraints, 150
Torsion of Concrete Beams with Large Openings, 483
Transverse Stirrup Spacing in R/C Beams, 492
Unified Plastic Analysis for Infilled Frames, 558
Concrete slabs
Impact Effect on R.C. Slabs: Analytical Approach, 569
Impulsive Direct Shear Failure in RC Slabs, 574
Test of Four-Panel Post-Tensioned Flat Plate, 590
Concrete structures
Application of NLFEA to Concrete Structures, 640
Construction Load Analysis for Concrete Structures, 535
On Minimum Reinforcement in Concrete Structures, 646
Partially Prestressed Concrete Structures, 586
Variability in Long-Term Concrete Deformations, 583
Concrete technology
New Ways with Concrete, 868
Roller Compacted Concrete, 1010
Conduits
Pipe Jacking Method for Long Curve Construction, 28
Cone penetration
Flow Field Around Cones in Steady Penetration, 246
Cone penetration tests
Liquefaction Potential of Sands Using the CPT, 256
- Constraints**
- Cone penetration tests
Measurement and Use of Shear Wave Velocity for Evaluating Dynamic Soil Properties, 994
Confinement
Confinement Effectiveness of Crossties in RC, 602
Connections
Axial Strength of Grouted Pile-to-Sleeve Connections, 526
Connection Flexibility and Steel Frames, 965
Dynamic Lateral-Load Tests of R/C Column-Slabs, 514
Hurricane Damage on Galveston's West Beach, 595
Tests of Full-Size Gusset Plate Connections, 513
Connections, bolted
Bolted Connections in Round Bar Steel Structures, 523
Cyclic Out-of-Plane Buckling of Double-Angle Bracing, 542
Eccentrically Loaded High Strength Bolted Connections, 534
Connections, welded
Cyclic Out-of-Plane Buckling of Double-Angle Bracing, 542
Consolidation
Uncertainty of One-Dimensional Consolidation Analysis, 312
Consolidation, soils
Comparison of Natural and Remolded Plastic Clay, 280
Gravity Effects in Consolidation of Layer of Soft Soil, 188
Settlement Analysis of Embankments on Soft Clays, 259
Constitutive equations
Endochronic Modeling of Sand in True Triaxial Test, 204
Formulation of Drucker-Prager Cap Model, 176
Constitutive models
Bounding Surface Plasticity Model for Concrete, 147
Constitutive Model for Concrete in Cyclic Compression, 173
Constitutive Model for Loading of Concrete, 506
Cyclic Testing and Modeling of Interfaces, 276
Microplane Model for Progressive Fracture of Concrete and Rock, 159
State Variable Model for Volumetric Creep of Clay, 129
Third-Invariant Model for Rate-Dependent Soils, 245
Constitutive relations
New Constitutive Law for Equal Leg Fillet Welds, 580
Plasticity and Constitutive Relations in Soil Mechanics, 265
Strain Softening with Creep and Exponential Algorithm, 149
Constraints
Stability of Plane Frames Omitting Axial Strains, 612

Construction

- Climatic Effects on Construction, 27
Construction Research Applied to Practice, 968
Containments for Limerick and Susquehanna Plants, 230
How Designers Can Avoid Construction Claims, 119
Opportunity Knocks from Behind Bars, 879
Pioneering Construction Engineering Education, 20
Productivity of Construction Professionals, 449
The Pursuit of Quality: QA/QC, 848
Segmental Post-Tensioned Dolphin at Tagrin Point, 15
Standard: Specifications for the Design and Construction of Composite Slabs and Commentary on Specifications for the Design and Construction of Composite Slabs, 1014
Vibration Criteria for Historic Buildings, 33
- Construction control**
- Application of Small Computers in Construction, 31
Automation and Robotics for Construction, 32
Expert Systems for Construction Project Monitoring, 39
Total Quality Management for Construction, 26
- Construction costs**
- Construction Cost Control, 966
Cost Engineering for Disputed Work, 914
Second-Guessing the Engineer, 939
- Construction equipment**
- An Information System for Building Products, 47
Production Estimating for Draglines, 24
Tunneling Operations and Equipment, 1021
- Construction industry**
- Absenteeism in Construction Industry, 465
Construction Productivity Improvement, 17
- Construction management**
- Application of Small Computers in Construction, 31
Avoiding Contract Disputes, 958
Construction Claims: Frequency and Severity, 22
Construction QA/QC Systems that Work: Case Studies, 967
Construction Research Applied to Practice, 968
Evaluation of Craftsman Questionnaire, 48
General Contractors' Management: How Subs Evaluate It, 36
Impacts of Constructability Improvement, 46
Managing Construction of Israeli Air Bases in Negev--A Personal Perspective, 469
On Site Performance Improvement Programs, 23
Pioneering Construction Engineering Education, 20
Portables Pay Off, 932
Productivity Analysis of Construction Operations, 19
Quality in the Constructed Project, 1002
Total Quality Management for Construction, 26
Valence of and Satisfaction with Job Outcomes, 21
- Construction materials**
- Concrete Armor Unit Form Inventory, 808

- An Information System for Building Products, 47
Product Specification Practices and Problems, 30
Reshaping the Future of Plastic Buildings, 867

Construction methods

- Automation and Robotics for Construction, 32
Building in Space, 884
Decisions in Construction Operations, 42
Floating Bridge for 100 Year Storm, 883
Impacts of Constructability Improvement, 46
Mixed Use, Mixed Materials, 850
Pipe Laying Comes Out of the Trenches, 949
Robotics in Building Construction, 37
SIREN: A Repetitive Construction Simulation Model, 40
Soil Nailing Supports Excavation, 859
Soil Tunnel Test Section: Case History Summary, 305

- Total Quality Management for Construction, 26
Tunneling Operations and Equipment, 1021
Uearing Mt. Baker Tunnel, 946

Construction planning

- A Simulation Model to Forecast Project Completion Time, 41

Construction procedure

- Segmental Post-Tensioned Dolphin at Tagrin Point, 15

Construction sites

- Miccos Go Afield, 839

Consulting services

- The Client Relationship: Effective Marketing Steps, 446

- Management Secrets of Top Consultants, 905

Container shipping

- Optimal Berth and Crane Combinations in Containerports, 829

Containment vessels

- Containments for Limerick and Susquehanna Plants, 230

- Friction Coefficient of Steel on Concrete or Grout, 502

Containments

- Dredging and Dredged Material Disposal, 975

Contaminants

- Spatial Estimation of Hazardous Waste Site Data, 98

Contamination

- Ground-Water Contamination in Silicon Valley, 749

- Metal Distribution and Contamination in Sediments, 58

Continental shelves

- Open Boundary Condition for Circulation Models, 331

Continuous beams

- Free Vibration Analysis of Continuous Beams, 163

Continuous structures

- Warping Moment Distribution, 498

Continuum mechanics

SUBJECT INDEX

Cracks

- Damage Mechanics and Continuum Modeling, 970
Contract administration
Avoiding Contract Disputes, 958
Liability: Attitudes and Procedures, 468
Negotiation and Contract Management, 995
Product Specification Practices and Problems, 30
Contract terms
Avoiding Contract Disputes, 958
Product Specification Practices and Problems, 30
Contraction
Theory for Thermally Induced Roof Noise, 615
Contractors
General Contractors' Management: How Subs Evaluate It, 36
Tender Evaluation by Fuzzy Sets, 35
Contracts
Avoiding Contract Disputes, 958
How Designers Can Avoid Construction Claims, 119
Negotiating Contracts, 941
Contracts, claims
Construction Claims: Frequency and Severity, 22
Product Specification Practices and Problems, 30
Control structures
Stormwater Detention Outlet Control Structures, 1015
Control surveys
Relative Error Analysis of Geodetic Networks, 660
Control systems
Optimization Issues in the Design and Control of Large Space Structures, 999
Convection
Miscible Displacement in Porous Media: MOC Solution, 416
Convergence
Monotone Behavior of Trusses Under Two Loadings, 484
Cooling systems
Power Production and Air Conditioning by Solar Ponds, 228
Cooling towers
Seismic Response of Pile Supported Cooling Towers, 591
Coral reefs and islands
Load Tests on Tubular Piles in Coralline Strata, 268
Corners
Collapse of Square PSC Slabs with Corner Restraint, 489
Corrosion
A Road to Recovery, 876
Testing of Cement-Mortar Lined Carbon Steel Pipes, 669
Corrosion control
Clearing the Decks, 922
Cost allocation
Accounting for CADD Center Costs, 934
Algorithm for Mixing Problems in Water Systems, 329
Financing and Charges for Wastewater Systems, 982
Cost analysis
Optimal Berth and Crane Combinations in Containerports, 829
What Do Pavements Cost?, 944
Cost control
Configuration Management as Applied to Engineering Projects, 462
Construction Cost Control, 966
Earned Value Technique for Performance Measurements, 454
Elements of Cost and Schedule Management, 460
Making Project Control Systems Work, 992
Project Management on a Micro, 931
The Role of the Resident Engineer, 1009
Total Quality Management for Construction, 26
Cost effectiveness
Minimum-Cost Design of Flexible Pavements, 683
Cost engineering
Cost Engineering for Disputed Work, 914
Cost minimization
Least-Cost Planning of Irrigation Systems, 442
Minimum Cost Prestressed Concrete Beam Design, 626
Minimum-Cost Design of Flexible Pavements, 683
Steel Construction Evaluation by MLR-Strategies, 29
USGS Telecommunications Responding to Change, 649
Costs
Wind Load Effects on Flat Plate Solar Collectors, 491
Cotton plants
Irrigation Scheduling Using Crop Indicators, 423
County government
Microcomputer Data Management System, 687
Cover plates
End-Bolted Cover Plates, 547
Crack propagation
Fracture Problems in the Transportation Industry, 984
Two Parameter Fracture Model for Concrete, 202
Cracking
Concrete Fracture in CLWL Specimen, 162
Extensional Stiffness of Precracked R/C Panels, 501
Offshore Platform Fatigue Cracking Probability, 573
On Minimum Reinforcement in Concrete Structures, 646
Shear Modulus of Precracked R/C Panels, 487
Cracks
Flexure of Statically Indeterminate Cracked Beams, 223
Hundreds of Bridges—Thousands of Cracks, 865
Plastic Response of Cantilevers with Stable Cracks,

- 175
Static and Fatigue Tests on Partially Prestressed Beams, 570
- Cranes**
Effective Length of Luffing Jibs, 630
- Optimal Berth and Crane Combinations in Containerports**, 829
- Creep**
Nonlinear Effects in Creep Buckling Analysis of Columns, 170
- Random Creep and Shrinkage in Structures: Sampling**, 541
- State Variable Model for Volumetric Creep of Clay**, 129
- Strain Softening with Creep and Exponential Algorithm**, 149
- Thermo-Mechanical Behavior of Seafloor Sediments**, 302
- Triple Power Law for Concrete Creep**, 130
- Critical load**
Buckling with Enforced Axis of Twist, 224
- Critical Load Program**, 874
- Critical path method**
CPM Harnesses Mammoth Powerplant Job, 836
- Elements of Cost and Schedule Management**, 460
- Network Scheduling Variations for Repetitive Work**, 25
- SIREN: A Repetitive Construction Simulation Model**, 40
- Crop yield**
Efficient Water Use in Run-of-the-River Irrigation, 425
- Irrigation Scheduling Using Crop Indicators**, 423
- Cross sections**
Subdivision Froude Number, 384
- Crossflow**
Comments on Cross-Flow Principle and Morison's Equation, 830
- Oblique Turbulent Jets in a Crossflow**, 211
- Surface Buoyant Jets in Steady and Reversing Crossflows**, 364
- Crushing**
Crushing of Soil Particles, 298
- Crystalline rock**
Inventorying Ground Water in Crystalline Rocks of Piedmont Region, 745
- Culverts**
Analytical Theory for Buried Tube Postbuckling, 181
- Culvert Slope Effects on Outlet Scour**, 401
- Kinematic-Wave Method for Peak Runoff Estimates**, 700
- Simplified Design of Contractions in Supercritical Flow**, 370
- Currents**
Distribution of Suspended Sediment in Large Waves, 828
- Interaction of Random Waves and Currents**, 776
- Time Series Modeling of Coastal Currents**, 822
- Varied Turbidity Current with Erosion and Deposition**, 411
- Curricula**
Challenges to Civil Engineering Educators and Practitioners—Where Should We Be Going?, 959
- Computer Programming in the Civil Engineering Curriculum**, 124
- LOGO as an Introduction to FORTRAN Programming**, 121
- One Plus One Makes Thirty**, 118
- Water Resources Engineering Education**, 748
- Curvature**
Equations for Plane, Moderately Curved Open Channel Flows, 349
- Partially Prestressed Concrete Structures**, 586
- Static and Fatigue Tests on Partially Prestressed Beams**, 570
- Cycles**
Cherepov Water Lifter: Theory and Experiment, 374
- Uniaxial Cyclic Stress-Strain Behavior of Structural Steel**, 193
- Cyclic loads**
Advances in the Art of Testing Soils Under Cyclic Conditions, 955
- Connection Flexibility and Steel Frames**, 965
- Constitutive Model for Concrete in Cyclic Compression**, 173
- Cyclic Behavior of Pavement Base Materials**, 234
- Cyclic Out-of-Plane Buckling of Double-Angle Bracing**, 542
- Cyclic Testing and Modeling of Interfaces**, 276
- Design Spectra for Degrading Systems**, 635
- Effect of Initial Shear on Cyclic Behavior of Sand**, 311
- Inelastic Cyclic Analysis of Imperfect Columns**, 546
- Liquefaction Resistance of Thickened Tailings**, 310
- Local Instability Tests of Plate Elements under Cyclic Uniaxial Loading**, 537
- Cylinders**
Comments on Cross-Flow Principle and Morison's Equation, 830
- Dynamic Stresses and Displacements in a Buried Tunnel**, 139
- Force Spectra from Partially Submerged Circular Cylinders in Random Seas**, 816
- Forces on Horizontal Cylinder Towed in Waves**, 827
- Morison Inertia Coefficients in Orbital Flow**, 772
- The Stability of Cylindrical Air-Supported Structures**, 220
- Torsion of Composite Bars by Boundary Element Method**, 200
- Wake Displacement as Cause of Lift Force on Cylinder Pair**, 132
- Cylindrical shells**
Buckling of Orthotropic Cylinders due to Wind Load, 161
- Cold-Formed Steel Farm Structures Part I: Grain Bins**, 600
- Cold-Formed Steel Farm Structures Part II: Barrel Shells**, 601
- Cold-Formed Steel Farm Structures Part II: Barrel**

SUBJECT INDEX

- Shells, 601
Cylindrical tanks
Axisymmetrical Vibrations of Tanks—Analytical, 146
Axisymmetrical Vibrations of Tanks—Numerical, 145
Dynamics of Internal Waves in Cylindrical Tank, 788
Model for Flexible Tanks Undergoing Rocking, 134
Dam construction
Concrete Face Rockfill Dams—Design, Construction, and Performance, 964
Dam Pioneers Concrete Variant, 887
Hydropower: Recent Developments, 988
Roller Compacted Concrete, 1010
Dam design
Average Uplift Computations for Hollow Gravity Dams, 344
Concrete Face Rockfill Dams—Design, Construction, and Performance, 964
Hydropower: Recent Developments, 988
Re-Examination of Slide of Lower San Fernando Dam, 294
Dam failure
Re-Examination of Slide of Lower San Fernando Dam, 294
Dam foundations
Concrete Face Rockfill Dams—Design, Construction, and Performance, 964
Dam safety
Hydraulic Fill Dam Made Earthquake Resistant, 881
New Safety for Old Dams, 923
Damage assessment
Damage to Armor Units: Model Technique, 813
Fracture Problems in the Transportation Industry, 984
Seismic Damage Analysis of Reinforced Concrete Buildings, 517
Structural Performance and Wind Speed-Damage Correlation in Hurricane Alicia, 634
Damage estimation
Determination of Urban Flood Damages, 743
Damage patterns
Damage Mechanics and Continuum Modeling, 970
Frequency of Railway Bridge Damage, 572
Damping
Control of Lateral-Torsional Motion of Wind-Excited Buildings, 172
Effects of Vortex-Resonance on Nearby Galloping Instability, 160
Horizontal Response of Piles in Layered Soils, 5
Hysteretic Dampers in Base Isolation: Random Approach, 515
Impact in Truss Bridge Due to Freight Trains, 135
Optimum Characteristics of Isolated Structures, 642
Vertical Response of Arbitrarily Shaped Embedded Foundations, 274
Dams
Finite Element Modeling of Infinite Reservoirs, 218

Data collection systems

- Hydrodynamic Pressure on a Dam During Earthquakes, 216
Innovative Powerhouse Designs, 989
Issues in Dam Grouting, 991
Dams, arch
Hydropower: Recent Developments, 988
Dams, concrete
Concrete Face Rockfill Dams—Design, Construction, and Performance, 964
Dam Pioneers Concrete Variant, 887
Hydropower: Recent Developments, 988
Reservoir Bottom Absorption Effects in Earthquake Response of Concrete Gravity Dams, 505
Roller Compacted Concrete, 1010
Simplified Earthquake Analysis of Concrete Gravity Dams: Combined Hydrodynamic and Foundation Interaction Effects, 168
Simplified Earthquake Analysis of Concrete Gravity Dams: Separate Hydrodynamic and Foundation Interaction Effects, 169
Dams, earth
Filters for Silts and Clays, 9
Model for Piping-Plugging in Earthen Structures, 278
Nonlinear Dynamic Analyses of an Earth Dam, 281
Nonlinear Hysteretic Dynamic Response of Soil Systems, 167
Re-Examination of Slide of Lower San Fernando Dam, 294
Soil Security Test for Water Retaining Structures, 500
Dams, embankment
Seepage and Leakage from Dams and Impoundments, 1011
Dams, gravity
Average Uplift Computations for Hollow Gravity Dams, 344
Dynamic Analysis of Short-Length Gravity Dams, 190
Reservoir Bottom Absorption Effects in Earthquake Response of Concrete Gravity Dams, 505
Simplified Earthquake Analysis of Concrete Gravity Dams: Combined Hydrodynamic and Foundation Interaction Effects, 168
Simplified Earthquake Analysis of Concrete Gravity Dams: Separate Hydrodynamic and Foundation Interaction Effects, 169
Dams, rockfill
Concrete Face Rockfill Dams—Design, Construction, and Performance, 964
Data acquisition
Automation and Robotics for Construction, 32
Data acquisition systems
Role of Telecommunications in Timekeeping, 651
Specific Resistance Measurements: Methods and Procedures, 65
Specific Resistance Measurements: Nonparabolic Data, 64
Data collection systems
Automated Remote Recording and Analysis of Coastal Data, 784

- Information Systems in Surveying, 648
Data collections
 Compilation of Alluvial Channel Data, 387
 Estimation of Hydraulic Data by Spline Functions, 392
Database management systems
 Distributed Data Bases for Surveying, 656
 Microcomputer Data Management System, 687
Databases
 Data Base in Your City's Future?, 935
 Telecommunications Access to National Geodetic Survey Integrated Data Base, 647
Decision making
 Mathematical Programming for Highway Project Analysis, 680
 Methods Used to Evaluate Highway Improvements, 2
 Multi-Attribute Utility in Pavement Rehabilitation Decisions, 701
 Multi-Objective Analysis with Subjective Information, 752
 Multi-Objective Decision-Making in Waste Disposal Planning, 73
 Planning Development with Transit Projects, 717
 Tender Evaluation by Fuzzy Sets, 35
Decision theory
 Decisions in Construction Operations, 42
 Models for Human Error in Structural Reliability, 554
Deep foundations
 Current Research and Research Needs in Deep Foundations, 969
 Seismic Response of Pile Supported Cooling Towers, 591
Deep water
 Collapse of Thick Wall Pipe in Ultra Deep Water, 704
Deflection
 Conjugate Frame for Shear and Flexure, 508
 Curved Bridge Decks: Analytical Strip Solution, 564
 Hundreds of Bridges—Thousands of Cracks, 865
 Model for Beam-Mode Buckling of Buried Pipelines, 140
 Nonlinear Analysis of Clamped Circular Plates, 622
 Nonlinear Analysis of Plates with Plastic Orthotropy, 609
 Partially Prestressed Concrete Structures, 586
 Plate Deflections Using Orthogonal Polynomials, 208
 Racking Deformations in Wood Shear Walls, 486
 Static and Fatigue Tests on Partially Prestressed Beams, 570
Deformation
 Analytical Theory for Buried Tube Postbuckling, 181
 Biaxial Stress-Strain Relations for Brick Masonry, 539
 Biaxially Loaded L-Shaped Reinforced Concrete Columns, 633

- Impact Tests on Frames and Elastic-Plastic Solutions, 213
 Instability of Thin Walled Bars, 180
 Large Deflected Plates and Shells with Loading History, 164
 Mechanics of Masonry in Compression, 524
 Racking Deformations in Wood Shear Walls, 486
Deformation analysis
 Detection and Localization of Geometrical Movements, 659
Degradation
 Design Spectra for Degrading Systems, 635
Delay time
 Evaluation of Craftsman Questionnaire, 48
Deltas
 Marsh Enhancement by Freshwater Diversion, 726
Demand
 Examining Air Travel Demand Using Time Series Data, 679
Densification
 Foundation Densification for Fossil Plant Loads, 226
Deposition
 Salt River Channelization Project: Model Study, 333
Depth
 Design Pressures in Circular Bins, 581
Desiccation
 Hydraulic Conductivity Tests on Compacted Clay, 260
Design
 Considering the Future in Public Works Planning, 109
 Containments for Limerick and Susquehanna Plants, 230
 Design Flexibility Cuts Costs, 838
 Direct Biaxial Design of Columns, 479
 Floating Breakwater Design, 778
 Generating Designs for Wastewater Systems, 92
 Impacts of Constructability Improvement, 46
 Learning From Failure, 840
 Making Project Control Systems Work, 992
 Quality in the Constructed Project, 1002
 Segmental Post-Tensioned Dolphin at Tagrin Point, 15
 Shop Drawing Review: Minimizing the Risks, 857
 A Space Frame Forecast, 910
Standard: Specifications for the Design and Construction of Composite Slabs and Commentary on Specifications for the Design and Construction of Composite Slabs, 1014
 Test Evaluation of Composite Beam Design Method, 477
Design criteria
 Boardman Labyrinth—Crest Spillway, 341
 Design Criteria for Box Columns Under Biaxial Loading, 637
 Design Pressures in Circular Bins, 581
 Hinged Floating Breakwater, 818

SUBJECT INDEX

Displacement

- Limit States Criteria for Masonry Construction, 476
Making Treatment Plants Work, 856
Relative Reliability of Dimension Lumber in Bending, 592
Significant Wave Height for Shallow Water Design, 814
Stormwater Detention Outlet Control Structures, 1015
Structural Optimization Using Reliability Concepts, 614
- Design improvements**
LAX Engineers Beat the Clock, 892
- Design standards**
Formwork Design, 45
- Design waves**
Wave Damping by Soil Motion, 762
Wave Statistical Uncertainties and Design of Breakwater, 820
- Design wind speed**
Wind Load Effects on Flat Plate Solar Collectors, 491
- Desorption**
Adsorption of Organic Vapors on Carbon and Resin, 81
Volatilization Rates of Organic Chemicals of Public Health Concern, 97
- Desulfurization**
Auto-Oxidation Effect on Flue Gas Sludge Systems, 227
- Detention basins**
Optimal Design of Detention and Drainage Channel Systems, 732
Planning Detention Storage for Stormwater Management, 751
Proportional Weirs for Stormwater Pond Outlets, 853
Putting CADD to Work, 929
Residence Time in Stormwater Detention Basins, 55
Stormwater Detention Outlet Control Structures, 1015
- Developing countries**
Segmental Post-Tensioned Dolphin at Tagrin Point, 15
- Dewatering**
Dewatering—Avoiding Its Unwanted Side Effects, 974
Unified Analysis of Thickening, 50
- Diaphragms**
Continuous Timber Diaphragms, 533
- Differential equations**
Acceleration Techniques for Coupled Nonlinear PDE's, 183
Random Vibration of Degrading, Pinching Systems, 186
- Diffraction**
Hydrodynamic Interaction of Flexible Structures, 806
- Diffusers**
Initial Dilution for Outfall Parallel to Current, 366
- Diffusion**
Boundary Element Calculations of Diffusion Equation, 144
Energy Fluctuation Scale and Diffusion Models, 133
Leaching of Tetrachloroethylene from Vinyl-Lined Pipe, 49
- Dikes**
Building on Muck, 875
Locks with Devices to Reduce Salt Intrusion, 826
- Dilution**
Initial Dilution for Outfall Parallel to Current, 366
Outfall Dilution: The Role of a Far-Field Model, 80
- Dimensional analysis**
Dimensionless Formulation of Furrow Irrigation, 444
Hydrodynamic Pressures Acting Upon Hinged-Arc Gates, 352
Model for Moving Media Reactor Performance, 89
Modeling of Rainfall Erosion, 400
On the Determination of Ripple Geometry, 389
Scaling the Weight of Breakwater Armor Units, 798
Volatilization Rates of Organic Chemicals of Public Health Concern, 97
- Dioxin**
Spatial Estimation of Hazardous Waste Site Data, 98
- Discharge**
Modification of River's Tide by Its Discharge, 775
- Discharge coefficients**
Body-Fitted Coordinates for Flow under Sluice Gates, 372
Flow Over Side Weirs in Circular Channels, 325
- Discharge measurement**
Modified Venturi Channel, 414
- Discontinuities**
Estimating Elastic Constants and Strength of Discontinuous Rock, 279
- Discrete elements**
Damage Mechanics and Continuum Modeling, 970
Torsional Response of Piles in Nonhomogeneous Soil, 285
- Discrimination**
Urban Transit: Equity Aspects, 719
- Dispersion**
Dispersion in Anisotropic, Homogeneous, Porous Media, 365
Dispersion Model for Waste Stabilization Ponds, 52
Miscible Displacement in Porous Media: MOC Solution, 416
Model of Dispersion in Coastal Waters, 316
Outfall Dilution: The Role of a Far-Field Model, 80
- Stochastic Model of Suspended Solid Dispersion, 319**
- Displacement**
Analogy for Beam-Foundation Elastic Systems, 576
Appropriate Forms in Nonlinear Analysis, 201
Lateral Force-Displacement Response of Buried Pipe, 293

- New Constitutive Law for Equal Leg Fillet Welds, 580
Pseudodynamic Method for Seismic Performance Testing, 562
Uplift Force-Displacement Response of Buried Pipe, 292
- Disposal**
Dredging and Dredged Material Disposal, 975
- Dissolved oxygen**
Biofilm Growths with Sucrose as Substrate, 71
Dissolved Oxygen Model for a Dynamic Reservoir, 91
Flux Use for Calibrating and Validating Models, 66
Nitrification in Water Hyacinth Treatment Systems, 94
Nitrogen Accountability for Fertile Streams, 75
Simultaneous In-Stream Nitrogen and D.O. Balancing, 74
A Standard for the Measurement of Oxygen Transfer in Clean Water, 1013
Stream Dissolved Oxygen Analysis and Control, 70
- Distortion**
Distortional Buckling of Steel Storage Rack Columns, 644
- Diversion structures**
Hydropower: Recent Developments, 988
- Dolphins, structures**
Segmental Post-Tensioned Dolphin at Tagrin Point, 15
- Domes, structural**
The Hybrid Arena, 849
Putting CADD to Work, 929
- Drafting**
Shop Drawing Review: Minimizing the Risks, 857
- Drag**
Comments on Cross-Flow Principle and Morison's Equation, 830
- Drag coefficient**
Drag of Oscillatory Waves on Spheres in a Permeable Bottom, 761
- Draglines**
Production Estimating for Draglines, 24
- Drainage**
Drainage Coefficients for Heavy Land, 421
Drainage Due to Gravity under Nonlinear Law, 419
Kinematic-Wave Method for Peak Runoff Estimates, 700
- Drainage systems**
Computer Keeps New Orleans: Head Above Water, 911
Development and Management Aspects of Irrigation and Drainage Systems, 972
Drainage Tunnels Save Freeway Link, 915
Optimal Design of Detention and Drainage Channel Systems, 732
- Drawdown**
Numerical Determination of Aquifer Constants, 386
Volumetric Approach to Type Curves in Leaky

- Aquifers, 345
- Dredging**
Deep-Draft Navigation Project Design, 759
Dredge-Induced Turbidity Plume Model, 790
Dredging and Dredged Material Disposal, 975
- Drilled piers**
Drilled Piers and Caissons II, 976
- Drilled shafts**
Blind Drilling Down Under, 913
- Drilling**
Raise Boring in Civil and Mining Applications, 18
- Droughts**
State Water Supply Management in New Jersey, 744
- Ductility**
Elastic-Plastic-Softening Analysis of Plane Frames, 525
Interaction of Plastic Local and Lateral Buckling, 607
- Dunes**
Geometry of Ripples and Dunes, 318
- Dynamic analysis**
Dynamic Analysis of a Forty-Four Story Building, 567
Dynamic Analysis of Short-Length Gravity Dams, 190
Dynamic Analysis of Structures by the DFT Method, 636
Dynamic Instability Analyses of Axially Impacted Columns, 178
Dynamics of Trusses by Component-Mode Method, 632
Floor Spectra for Nonclassically Damped Structures, 625
Free Vibration Analysis of Continuous Beams, 163
Nonlinear Dynamic Analyses of an Earth Dam, 281
Steady-State Dynamic Analysis of Hysteretic Systems, 222
Vibrational Characteristics of Multi-Cellular Structures, 559
- Dynamic characteristics**
Ambient Vibration Studies of Golden Gate Bridge II: Pier-Tower Structure, 154
Axisymmetrical Vibrations of Tanks—Analytical, 146
- Dynamic loads**
Constitutive Model for Loading of Concrete, 506
Effects of Vehicles on Buried, High-Pressure Pipe, 685
Impact Effect on R.C. Slabs: Analytical Approach, 569
Nonlinear Static and Dynamic Analysis of Plates, 136
Silo as a System of Self-Induced Vibration, 481
- Dynamic programming**
Capacity Expansion of Sao Paulo Water Supply, 741
Stochastic Optimization/Simulation of Centralized Liquid Industrial Waste Treatment, 100
- Dynamic response**

SUBJECT INDEX

Education

- Dynamic Analysis of Orthotropic Plate Structures, 187
Dynamic Analysis of Structures by the DFT Method, 636
Dynamic Behavior of Pile Groups in Inhomogeneous Soil, 309
Dynamic Centrifugal Modeling of a Horizontal Dry Sand Layer, 250
Dynamic Characterization of Two-Degree-of-Freedom Equipment-Structure Systems, 127
Dynamic Instability Analyses of Axially Impacted Columns, 178
Dynamic Response of Multiply Supported Secondary Systems, 128
Dynamic Response of Tall Building to Wind Excitation, 521
Dynamic Stresses and Displacements in a Buried Tunnel, 139
Energy Fluctuation Scale and Diffusion Models, 133
Impact in Truss Bridge Due to Freight Trains, 135
Model for Flexible Tanks Undergoing Rocking, 134
Nonlinear Hysteretic Dynamic Response of Soil Systems, 167
Non-Normal Responses and Fatigue Damage, 206
Optimum Building Design for Forced-Mode Compliance, 197
Response of Semi-Submersibles in Ice Environment, 667
- Dynamic structural analysis**
Simplified Earthquake Analysis of Multistory Structures With Foundation Uplift, 641
Simplified Earthquake Analysis of Structures with Foundation Uplift, 527
- Dynamics**
Collapse of SDOF System to Harmonic Excitation, 151
- Earth reinforcement**
Flexural Behavior of Reinforced Soil Beams, 307
Reinforced Embankments: Analysis and Design, 3
Soil Nailing Supports Excavation, 859
Stability of Membrane Reinforced Slopes, 304
Wharf Stands on Stone Columns, 834
- Earth structures**
Flexural Behavior of Reinforced Soil Beams, 307
Rammed Earth House Construction, 306
- Earthfill**
Expanded Shale Lightweight Fill: Geotechnical Properties, 290
- Earthquake damage**
Mechanistic Seismic Damage Model for Reinforced Concrete, 516
Re-Examination of Slide of Lower San Fernando Dam, 294
Seismic Damage Analysis of Reinforced Concrete Buildings, 517
- Earthquake engineering**
Model for Beam-Mode Buckling of Buried Pipelines, 140
Stochastic Evaluation of Seismic Structural Performance, 545
- Earthquake excitation**
Active Control of Seismic-Excited Buildings, 606
- Earthquake resistant structures**
Design of a Seismic-Resistant Friction-Braced Frame, 643
Hydraulic Fill Dam Made Earthquake Resistant, 881
San Francisco Outfall: The Champ?, 952
- Earthquake simulation models**
Lateral Load Response of Flat-Plate Frame, 605
- Earthquakes**
Hydrodynamic Pressure on a Dam During Earthquakes, 216
Simplified Earthquake Analysis of Concrete Gravity Dams: Combined Hydrodynamic and Foundation Interaction Effects, 168
Simplified Earthquake Analysis of Concrete Gravity Dams: Separate Hydrodynamic and Foundation Interaction Effects, 169
Transmitting Boundaries and Seismic Response, 244
- Eccentric loads**
Dimensioning Footings Subjected to Eccentric Loads, 269
Eccentrically Loaded High Strength Bolted Connections, 534
- Eccentricity**
Torsional Instability in Hysteretic Structures, 156
- Economic analysis**
Economics of Pumping and the Utilization Factor, 404
MDS Project—Main Dimensions and Economics, 232
Railway Route Rationalization: A Valuation Model, 675
Significance of Location in Computing Flood Damage, 730
Simulating Cost and Quality in Water Distribution, 755
- Economic development**
Planning Development with Transit Projects, 717
- Economic factors**
Ethics of Professionalism, 125
Federal Policies in Water Resources Planning, 981
Multi-Objective Decision-Making in Waste Disposal Planning, 73
- Economic impact**
Impact of Conservation on Rates and Operating Costs, 738
Residential Real Estate Development in Saudi Arabia, 721
A Tale of Two Cities: Light Rail Transit in Canada, 715
- Economic justification**
Modern Material Ropeway Capabilities and Characteristics, 716
- Education**
Pioneering Construction Engineering Education, 20
- Education-practice interchange**
Challenges to Civil Engineering Educators and

- Practitioners—Where Should We Be Going?**, 959
Engineering Education: An Update, 904
Effective length
 Effective Length of Columns in Steel Radial Gates, 621
 Effective Length of Luffing Jibs, 630
Effective stress
 Richart Commemorative Lectures, 1007
 Stress Anisotropy Effects on Clay Strength, 254
Effective width
 On the Computation of Slab Effective Widths, 493
 Shear Lag Analysis and Effective Width of Curved Girder Bridges, 131
Eigenvalues
 Free Vibration Analysis of Continuous Beams, 163
Elastic analysis
 Elastic Analysis of Gusseted Truss Joints, 631
Elastic properties
 Biaxial Stress-Strain Relations for Brick Masonry, 539
 Lateral Stability of Beams with Elastic End Restraints, 155
Elasticity
 Beam on Generalized Two-Parameter Foundation, 165
Electric power demand
 Energy Forecasting, 977
Electrical measurement
 New Method for Evaluating Liquefaction Potential, 239
Electrical resistivity
 Electrical Resistivity for Estimating Ground-Water Recharge, 427
Electronic equipment
 Rating Pavements by Computer, 933
Embankment stability
 Reinforced Embankments: Analysis and Design, 3
Embankments
 Issues in Dam Grouting, 991
 Reinforced Embankments: Analysis and Design, 3
 Settlement Analysis of Embankments on Soft Clays, 259
Empirical strength
 Comparison of Two Strength Criteria for Intact Rock, 314
Employee benefits
 Selecting the Correct Retirement Plan for Your Business, 455
Employee relations
 Critical Human Technology Issues for Engineers, 466
 Managing Productivity During an Attrition Program, 451
Employees
 Motivating and Managing Engineers, 112
Employment
 What Do You Look for in a New Engineer?, 448
End restraint
 Imperfect Columns with Biaxial Partial Restraints, 518
Energy
 Energy Forecasting, 977
Energy conservation
 Cherepnov Water Lifter: Theory and Experiment, 374
Energy dissipation
 A Method for Investigation of Steady State Wave Spectra in Bays, 801
 Numerical Prediction of Wave Transformation, 815
 Numerical Study of Finite Amplitude Wave Refraction, 763
 Stepped Spillway Hydraulic Model Investigation, 410
Energy recovery systems
 Demoresearch for Resource and Energy Recovery, 111
Engineering education
 1984 Civil Engineering Educators Salary Survey, 122
 Challenges to Civil Engineering Educators and Practitioners—Where Should We Be Going?, 959
 Civil Engineering and Engineering Enrollments, 116
 A Common Sense Approach to the Fundamentals Exam, 123
 Computer Programming in the Civil Engineering Curriculum, 124
 Engineering Education: An Update, 904
 Engineers as Managers, 456
 Issues in Engineering Education, 120
 LOGO as an Introduction to FORTRAN Programming, 121
 The Microcomputer in C.E. Education: A Survey, 665
 One Plus One Makes Thirty, 118
 Water Resources Engineering Education, 748
Engineering firms
 Establishing a Professional Practice, 463
 Specialization as a Strategy for Growth, 464
Engineering mechanics
 Damage Mechanics and Continuum Modeling, 970
 A Moment of Inertia Invariant, 587
Engineering societies
 Issues in Engineering Education, 120
Engineering surveying
 Definition of the Term "Engineering Surveying", 663
Engineers
 Motivating and Managing Engineers, 112
Entrainment
 Mixed-Layer Deepening in Lakes after Wind Setup, 396
Environment
 Civil Engineering in the Arctic Offshore, 960
Environmental audit
 Auditors Eye the Environment, 858

SUBJECT INDEX

Faculty

- Environmental compatibility**
Martin Marietta Complex, 900
- Environmental engineering**
Environmental Engineering, 980
- Environmental factors**
Geotechnical Characteristics of Residual Soils, 238
Nineteenth Coastal Engineering Conference: Proceedings of the International Conference, 997
- Environmental impact statements**
Solid Waste Management for Utility Reconversions, 229
- Environmental impacts**
Dredging and Dredged Material Disposal, 975
Modern Material Ropeway Capabilities and Characteristics, 716
Multi-Objective Decision-Making in Waste Disposal Planning, 73
- Environmental quality regulations**
Auditors Eye the Environment, 858
Ground-Water Protection in San Francisco Bay Area, 76
Hammering Out a New RCRA, 863
- Ephemeral streams**
Erosion Risk Analysis for a Southwestern Arroyo, 720
- Epilimnion**
Dissolved Oxygen Model for a Dynamic Reservoir, 91
- Epoxy coatings**
Biggest Highway Rebuild, 889
- Epoxy compounds**
Decay, Weathering and Epoxy Repair of Timber, 490
- Epoxy resins**
Decay, Weathering and Epoxy Repair of Timber, 490
- Equalizing reservoirs**
Development and Analysis of Equalization Basins, 107
- Equilibrium profile**
Sea Level Rise Effects on Shoreline Position, 824
- Equipment**
Dredging and Dredged Material Disposal, 975
- Erosion**
Culvert Slope Effects on Outlet Scour, 401
Equilibrium Boundary Condition for Suspension, 322
Erosion of Soft Cohesive Sediment Deposits, 398
Erosion Risk Analysis for a Southwestern Arroyo, 720
Filters for Silts and Clays, 9
Local Scour Downstream of an Apron, 403
Model for Piping-Plugging in Earthen Structures, 278
Streambank Stability, 267
Varied Turbidity Current with Erosion and Deposition, 411
Erosion control
- A Tale of Six Cities, 866
- Errors**
Models for Human Error in Structural Reliability, 554
- Esthetics**
The Engineering Aesthetics of Tall Buildings, 978
- Estimating**
Steel Construction Evaluation by MLR-Strategies, 29
- Estuaries**
Erosion of Soft Cohesive Sediment Deposits, 398
Lower Mississippi Salinity Analysis, 335
Marsh Enhancement by Freshwater Diversion, 726
Nineteenth Coastal Engineering Conference: Proceedings of the International Conference, 997
Open Boundary Condition for Circulation Models, 331
- Ethics**
Bid-Rigging: An Inside Story, 855
Ethics in the Field, 954
Ethics of Professionalism, 125
- Europe**
Who Should Design Bridges?, 903
- Evaluation**
Generalized Finite Element Evaluation Procedure, 497
Managing the Transition to CADD, 457
- Evapotranspiration**
Evapotranspiration of Small Conifers, 441
- Examination**
A Common Sense Approach to the Fundamentals Exam, 123
- Excavation**
Ground Freezing for Construction, 837
Monitoring Saves a Site, 873
Production Estimating for Draglines, 24
Soil Nailing Supports Excavation, 859
- Expansion**
LAX Engineers Beat the Clock, 892
Theory for Thermally Induced Roof Noise, 615
- Expansion joints**
Jointless Bridge Decks, 945
- Expert systems**
Expert Systems for Construction Project Monitoring, 39
- Exploration**
Civil Engineering in the Arctic Offshore, 960
- Extraction procedures**
Heavy Oil Mining—An Overview, 666
- Fabrication**
Steel Construction Evaluation by MLR-Strategies, 29
- Faculty**
1984 Civil Engineering Educators Salary Survey, 122
Challenges to Civil Engineering Educators and Practitioners—Where Should We Be Going?, 959

Failure

- Failure**
 - Glass Strength Degradation under Fluctuating Loads, 560
- Failure load**
 - Critical Load Program, 874
 - Wood Floor Behavior: Experimental Study, 628
- Failures**
 - High Strength Steel, 870
 - Professional Liability of the Architect and Engineer, 115
- Failures, investigations**
 - Analysis of Events in Recent Structural Failures, 561
 - Learning From Failure, 840
 - Reducing Failures of Engineered Facilities, 1004
 - Re-Examination of Slide of Lower San Fernando Dam, 294
 - Skyscraper* (review), 854
- Far field**
 - Elastostatic Infinite Elements for Layered Half Spaces, 196
- Farms**
 - Shrimp Farm Made Feasible, 897
- Fatigue**
 - Non-Normal Responses and Fatigue Damage, 206
 - Offshore Platform Fatigue Cracking Probability, 573
 - Wind-Induced Fatigue on Low Metal Buildings, 522
- Fatigue life**
 - Calibration of Bridge Fatigue Design Model, 548
- Fatigue strength**
 - End-Bolted Cover Plates, 547
- Fatigue tests**
 - Static and Fatigue Tests on Partially Prestressed Beams, 570
- Feasibility studies**
 - MDS Project—Main Dimensions and Economics, 232
- Federal agencies**
 - A Uniform Technique for Flood Frequency Analysis, 747
- Federal government**
 - Federal Policies in Water Resources Planning, 981
- Federal project policy**
 - Federal Policies in Water Resources Planning, 981
- Federal role**
 - Rebuilding America: Infrastructure Rehabilitation, 1003
 - Research Agenda for Floods to Solve Policy Failure, 729
- Federal-state cooperation**
 - Research Agenda for Floods to Solve Policy Failure, 729
- Fenders**
 - Pier Review, 921
- Fiber reinforced materials**

1985 ASCE TRANSACTIONS

- Continuum Damage Mechanics of Fiber Reinforced Concrete, 185**
- Fiber Reinforced Beams Under Moment and Shear, 503**
- Fiber-Reinforced Concrete Deep Beams with Openings, 575**
- Tunnel Shotcreting—Strength in Fibers, 953**
- Field investigations**
 - Uplift Behavior of Anchor Foundations in Soil, 1022
- Field tests**
 - Flow Resistance Estimation in Mountain Rivers, 355
 - Pipe Jacking Method for Long Curve Construction, 28
- Fillet welds**
 - New Constitutive Law for Equal Leg Fillet Welds, 580
- Filters**
 - Filters for Silts and Clays, 9
- Filtration**
 - Fundamentals and Theory of Air Scour, 11
 - Particles, Pretreatment, and Performance in Water Filtration—*b*Environmental Engineering, James C. O'Shaughnessy, ed., 1985, 13
 - Particles, Pretreatment, and Performance in Water Filtration, 105
- Specific Resistance Measurements: Methods and Procedures, 65**
- Specific Resistance Measurements: Nonparabolic Data, 64**
- Financial analysis**
 - Micro-CAD: Can It Pay for Itself, 927
- Financial management**
 - Communicating the Company's Operating Performance Data, 447
 - Financing and Charges for Wastewater Systems, 982
 - Research Needs for Infrastructure Management, 723
- Financial reports**
 - Communicating the Company's Operating Performance Data, 447
- Financing**
 - Challenges to Civil Engineering Educators and Practitioners—Where Should We Be Going?, 959
 - Floating Bridge for 100 Year Storm, 883
 - Private Funds, Public Projects, 920
 - Tampa Does It with Mirrors, 947
 - The University: Eisenhower's Warning Reconsidered, 110
 - User-Pay Funding and Creative Capital Financing, 113
- Finite difference method**
 - Flow Over Side Weirs in Circular Channels, 325
 - Rubble Mounds: Numerical Modeling of Wave Motion, 812
- Finite differences**
 - A Moment of Inertia Invariant, 587
- Finite element analysis**

SUBJECT INDEX

- Cyclic Testing and Modeling of Interfaces, 276
Estimating Elastic Constants and Strength of Discontinuous Rock, 279
Evaluation of Soil Response to EPB Shield Tunnelling, 243
Finite Element Analyses of Lock and Dam 26
Cofferdam, 263
Formulation of Drucker-Prager Cap Model, 176
Stress Intensity Factor Using Quarter Point Element, 138
- Finite element method**
Application of NLFEA to Concrete Structures, 640
Boundary Element Calculations of Diffusion Equation, 144
Dynamic Response of Tall Building to Wind Excitation, 521
FEM Solution of 3-D Wave Interference Problems, 803
Finite Element Modeling of Infinite Reservoirs, 218
Finite Element Modelling of Nonlinear Coastal Currents, 786
Generalized Finite Element Evaluation Procedure, 497
Hydrodynamic Interaction of Flexible Structures, 806
Instability of Thin Walled Bars, 180
Interactive Buckling in Thin-Walled Beam-Columns, 219
Minimum Weight Sizing of Guyed Antenna Towers, 603
New Analysis Techniques for Structural Masonry, 996
On the Reliability of a Simple Hysteretic System, 221
Review of Nonlinear FE Methods with Substructures, 212
Subregion Iteration of Finite Element Method for Large-Field Problems of Ground-Water Solute Transport, 350
Vibrational Characteristics of Multi-Cellular Structures, 559
Wave Interference Effects by Finite Element Method, 758
- Finite elements**
Static Infinite Element Formulation, 619
- Finite strip method**
Composite Box Girder Bridge Behavior During Construction, 507
- Fisheries**
Impact of Lake Acidification on Stratification, 101
- Fixed structures**
Stiffness Properties of Fixed and Guyed Platforms, 485
- Fixed-bed models**
Salt River Channelization Project: Model Study, 333
- Flanges**
Buckling with Enforced Axis of Twist, 224
Eccentrically Loaded High Strength Bolted Connections, 534
Test Evaluation of Composite Beam Design Method, 477
- Flood frequency**
Connection Flexibility and Steel Frames, 965
Model for Flexible Tanks Undergoing Rocking, 134
Tubular Steel Trusses with Cropped Webs, 553
- Flexible pavements**
Extension of CBR Method to Highway Pavements, 710
Minimum-Cost Design of Flexible Pavements, 683
- Flexural strength**
Flexural Limit Design of Column Footings, 613
Flexural Strength of Masonry Prisms versus Wall Panels, 597
- Flexure**
Conjugate Frame for Shear and Flexure, 508
Flexure of Statically Indeterminate Cracked Beams, 223
Probabilistic Basis for Design Criteria in Reinforced Concrete, 1001
- Floating breakwaters**
Floating Breakwater Design, 778
Hinged Floating Breakwater, 818
- Floating ice**
Rigid-Plastic Analysis of Floating Plates, 174
- Floating structures**
Response of Semi-Submersibles in Ice Environment, 667
- Flocculants**
Modified Approach to Evaluate Column Test Data, 63
- Flocculation**
A Critique of Camp and Stein's RMS Velocity Gradient, 96
- Floes**
Response of Semi-Submersibles in Ice Environment, 667
- Flood control**
Application of Extreme Value Theory to Flood Damage, 756
Determination of Urban Flood Damages, 743
Development of a Flood Management Plan, 753
Flood Storage in Reservoirs, 418
Lower Mississippi Valley Floods of 1982 and 1983, 754
Overbank Flow with Vegetatively Roughened Flood Plains, 395
Research Agenda for Floods to Solve Policy Failure, 729
Significance of Location in Computing Flood Damage, 730
- Flood damage**
Application of Extreme Value Theory to Flood Damage, 756
Determination of Urban Flood Damages, 743
Research Agenda for Floods to Solve Policy Failure, 729
Significance of Location in Computing Flood Damage, 730
- Flood frequency**
Large Basin Deterministic Hydrology: A Case

Flood frequency

- Study, 393
Marsh Enhancement by Freshwater Diversion, 726
Relative Accuracy of Log Pearson III Procedures, 380
Spatially Varying Rainfall and Floodrisk Analysis, 362
A Uniform Technique for Flood Frequency Analysis, 747
Flood plain planning
Application of Extreme Value Theory to Flood Damage, 756
Development of a Flood Management Plan, 753
Flood plain studies
Putting CADD to Work, 929
Flood plains
Structure of Turbulence in Compound Channel Flows, 394
Flood routing
Analytical Diffusion Model for Flood Routing, 343
Negative Outflows from Muskingum Flood Routing, 378
River Flood Routing by Nonlinear Muskingum Method, 409
Stability of Dynamic Flood Routing Schemes, 412
Flood stages
Stage Frequency Analysis at a Major River Junction, 351
Floods
Erosion Risk Analysis for a Southwestern Arroyo, 720
Lower Mississippi Valley Floods of 1982 and 1983, 754
Floodwaves
Kinematic Shock: Sensitivity Analysis, 353
Floors
Analysis of Two-Way Acting Composite Slabs, 470
Direct Model Test of Stub Girder Floor System, 563
Floor Spectra for Nonclassically Damped Structures, 625
On the Computation of Slab Effective Widths, 493
Seismic floor spectra by mode acceleration approach, 214
Seismic Response of Light Subsystems on Inelastic Structures, 495
Shear Capacity of Stub-Girders: Full Scale Tests, 473
Flow characteristics
Head-Discharge Relation for Vortex Shaft, 379
Sediment Transport under Ice Cover, 373
Stepped Spillway Hydraulic Model Investigation, 410
Flow coefficient
Control Valve Flow Coefficients, 695
Flow control
Automatic Throttle Hose—New Flow Regulator, 434
Control Valve Flow Coefficients, 695
Flow distribution

1985 ASCE TRANSACTIONS

- Flow Distribution in Compound Channels, 338
Flow measurement
Free Flow Discharge Characteristics of Throatless Flumes, 417
Flow rates
Effect of Pier Spacing on Scour Around Bridge Piers, 385
Modeling of Flow Velocity Using Weirs, 320
Nomogram for Velocities of Partial Flows in Sewers, 62
Self-Cleansing Slope for Partially Full Sewers, 108
Flow resistance
Characteristics of Free Surface Flow Over a Gravel Bed, 438
Estimating Mean Velocity in Mountain Rivers, 354
Flow Resistance Estimation in Mountain Rivers, 355
Flow separation
Two-Equation Turbulence Model for Flow in Trenches, 6
Flow simulation
Flow under Tilt Surface for High-Rate Settling, 67
Flue gases
Auto-Oxidation Effect on Flue Gas Sludge Systems, 227
Fluid flow
Body-Fitted Coordinates for Flow under Sluice Gates, 372
Laminar Flow in Conduits of Unconventional Shape, 171
Local Scour Downstream of an Apron, 403
Near-Bed Velocity Distribution, 361
Radial Turbulent Flow Between Parallel Plates, 359
Regime of Oscillatory Flow, 764
Simplified Design of Contractions in Supercritical Flow, 370
Vortex-Induced Oscillation of Structures in Water, 777
Fluid mechanics
Experimental Measurement of Multiple-Jet Induced Flow, 191
Fluid-structure interaction
Axisymmetrical Vibrations of Tanks—Numerical, 145
Seismically Induced Fluid Forces on Elevated Tanks, 664
Simplified Earthquake Analysis of Concrete Gravity Dams: Combined Hydrodynamic and Foundation Interaction Effects, 168
Simplified Earthquake Analysis of Concrete Gravity Dams: Separate Hydrodynamic and Foundation Interaction Effects, 169
Flumes
Boundary Shear in Smooth Rectangular Ducts, 317
Free Flow Discharge Characteristics of Throatless Flumes, 417
Modified Venturi Channel, 414
Simplified Design of Contractions in Supercritical Flow, 370
Water Particle Velocities in Regular Waves, 771

SUBJECT INDEX

- Fly ash**
Developments in New and Existing Materials, 973
Field Aging of Fixed Sulfur Dioxide Scrubber Waste, 231
Revegetation Using Coal Ash Mixtures, 85
- Foam**
Foam Grout Saves Tunnel, 924
- Footings**
Dimensioning Footings Subjected to Eccentric Loads, 269
Flexural Limit Design of Column Footings, 613
Interference Between Geotechnical Structures, 258
- Force**
Analogy for Beam-Foundation Elastic Systems, 576
- Forecasting**
Energy Forecasting, 977
Predicted Extreme High Tides for California: 1983-2000, 809
River Flow Forecasting Model for the Sturgeon River, 336
Time Series Models for Treatment of Surface Waters, 51
- Forensic engineering**
Reducing Failures of Engineered Facilities, 1004
- Formwork, construction**
Concrete Armor Unit Form Inventory, 808
Construction Load Analysis for Concrete Structures, 535
Formwork Design, 45
- Foundation settlement**
Performance of a Stone Column Foundation, 247
- Foundation stability analysis**
Effect of Underground Void on Foundation Stability, 289
- Foundations**
Analogy for Beam-Foundation Elastic Systems, 576
Analysis of Plates on a Kerr Foundation Model, 210
Experimental Foundation Impedance Functions, 277
Foundation Densification for Fossil Plant Loads, 226
Foundations in Permafrost and Seasonal Frost, 983
On the Determination of Foundation Model Parameters, 308
Punch-Through Instability of Jack-Up on Seabed, 264
Simplified Earthquake Analysis of Structures with Foundation Uplift, 527
Uplift Behavior of Anchor Foundations in Soil, 1022
Vertical Response of Arbitrarily Shaped Embedded Foundations, 274
- Fourier transform**
Distortions Associated with Random Sea Simulators, 800
- Fracture mechanics**
Fracture Problems in the Transportation Industry, 984
Microplane Model for Progressive Fracture of Concrete and Rock, 159
Rock Masses: Modeling of Underground Openings/Probability of Slope Failure/Fracture of Intact Rock, 1008
Stress Intensity Factor Using Quarter Point Element, 138
Two Parameter Fracture Model for Concrete, 202
- Fracturing**
Concrete Fracture in CLWL Specimen, 162
- Frame design**
Gable Frame Design Considerations, 566
- Framed structures**
Behavior of Wood-Framed Shear Walls, 578
Lateral Load Response of Flat-Plate Frame, 605
- Frames**
Conjugate Frame for Shear and Flexure, 508
Critical Load Program, 874
Elastic-Plastic-Softening Analysis of Plane Frames, 525
Frame Moments with the Takabeya Method, 844
Impact Tests on Frames and Elastic-Plastic Solutions, 213
Seismic Response of RC Frames with Steel Braces, 604
Stability of Plane Frames Omitting Axial Strains, 612
Staggered Truss Adapted to High Rise, 878
Stiffness Matrix for Elastic-Softening Beams, 499
Torsional Instability in Hysteretic Structures, 156
Unified Plastic Analysis for Infilled Frames, 558
- Free surfaces**
Body-Fitted Coordinates for Flow under Sluice Gates, 372
Drainage Due to Gravity under Nonlinear Law, 419
Simulation of Two-Fluid Response in Vicinity of Recovery Wells, 390
- Freeze-thaw cycle**
Freezing and Thawing of Soil-Water Systems, 985
- Freezing**
Ground Freezing for Construction, 837
- Freight**
Congestion Cost and Pricing of Seaports, 782
- Frequency analysis**
Relative Accuracy of Log Pearson III Procedures, 380
Spatially Varying Rainfall and Floodrisk Analysis, 362
Stage Frequency Analysis at a Major River Junction, 351
Time Series Modeling of Coastal Currents, 822
A Uniform Technique for Flood Frequency Analysis, 747
- Friction**
Boundary Shear in Smooth Rectangular Ducts, 317
Design and Analysis of Silos for Friction Forces, 555
Friction Coefficient of Steel on Concrete or Grout, 502
- Friction factor**

- Estimating Mean Velocity in Mountain Rivers, 354
 Fluid and Sediment Interaction over a Plane Bed, 371
 Modeling of Unsteady Flows in Alluvial Streams, 332
- Frost heave**
 Freezing and Thawing of Soil-Water Systems, 985
- Froude number**
 Subdivision Froude Number, 384
- Frozen soils**
 Foundations in Permafrost and Seasonal Frost, 983
 Freezing and Thawing of Soil-Water Systems, 985
 Latent Heat of Frozen Saline Coarse-Grained Soil, 266
 Thermal Design Considerations in Frozen Ground Engineering, 1019
- Fuel consumption**
 Estimating Fuel Consumption from Engine Size, 694
- Full-scale tests**
 Reinforced Concrete Pipe Columns: Behavior and Design, 10
 Shear Capacity of Stub-Girders: Full Scale Tests, 473
 Tests of Full-Size Gusset Plate Connections, 513
- Fundamentals**
 A Common Sense Approach to the Fundamentals Exam, 123
- Funding allocations**
 New Safety for Old Dams, 923
 Tampa Does It with Mirrors, 947
 The University: Eisenhower's Warning Reconsidered, 110
- Furrow irrigation**
 Dimensionless Formulation of Furrow Irrigation, 444
 Furrow Irrigation Simulation Time Reduction, 424
- Fuzzy sets**
 Decisions in Construction Operations, 42
 Tender Evaluation by Fuzzy Sets, 35
- Gables**
 Gable Frame Design Considerations, 566
- Gates**
 Effective Length of Columns in Steel Radial Gates, 621
 Hydrodynamic Pressures Acting Upon Hinged-Arc Gates, 352
- Geodesy**
 Mathematical Models within Geodetic Frame, 658
- Geodetic surveys**
 Detection and Localization of Geometrical Movements, 659
 Relative Error Analysis of Geodetic Networks, 660
 Telecommunications Access to National Geodetic Survey Integrated Data Base, 647
- Geologic processes**
 Predicting Sinkhole Collapse, 943
- Geometry**
- Effects of Weld Configurations on Strain Field, 618
- Geotechnical engineering**
 Drilled Piers and Caissons II, 976
 Engineering with Spreadsheets, 930
 Geotechnical Characteristics of Residual Soils, 238
 Thermal Design Considerations in Frozen Ground Engineering, 1019
 Wharf Stands on Stone Columns, 834
- Geotechnical structures**
 Interference Between Geotechnical Structures, 258
- Geotextiles**
 Building on Muck, 875
 Engineering with Fabric, 950
 Reinforced Embankments: Analysis and Design, 3
 Stability of Membrane Reinforced Slopes, 304
- Girders**
 Shear Capacity of Stub-Girders: Full Scale Tests, 473
- Girts**
 Z-Section Girts Under Negative Loading, 504
- Glass**
 Bound Glass in Shredded Municipal Solid Waste, 233
 Glass Strength Degradation under Fluctuating Loads, 560
 Laminated Glass Units under Uniform Lateral Pressure, 536
- Glass fibers**
 Buckling Analysis of FRP-Faced Anisotropic Cylindrical Sandwich Panel, 157
- Glass plates**
 Thin Glass Plates on Elastic Supports, 623
- Goals**
 Harmonizing Organizational and Personal Needs, 467
 Rebuilding America: Infrastructure Rehabilitation, 1003
- Government agencies**
 Exporting Colorado Water in Coal Slurry Pipelines, 739
- Government employees**
 Professional Registration of Government Engineers, 117
- Government role**
 Issues in Engineering Education, 120
- Graduate study**
 Water Resources Engineering Education, 748
- Grain size**
 The Influence of SPT Procedures in Soil Liquefaction Resistance Evaluations, 313
- Grain storage**
 Cold-Formed Steel Farm Structures Part I: Grain Bins, 600
- Granular materials**
 Expanded Shale Lightweight Fill: Geotechnical Properties, 290
 Formulation of Drucker-Prager Cap Model, 176
 Silo as a System of Self-Induced Vibration, 481

SUBJECT INDEX

Hazardous materials

- Third-Invariant Model for Rate-Dependent Soils, 245
- Granular media**
- Carbon Columns: Success at Last, 842
- General Failure Criterion for Isotropic Media, 137
- Polyaxial Yielding of Granular Rock, 189
- Removal of Radon from Water Supplies, 83
- Gravel**
- Compaction Characteristics of River Terrace Gravel, 288
- Gravity**
- Gravity Effects in Consolidation of Layer of Soft Soil, 188
- Grid systems**
- Torsion of Concrete Beams with Large Openings, 483
- Grillages**
- Vibrational Characteristics of Multi-Cellular Structures, 559
- Ground motion**
- Dynamic Analysis of Short-Length Gravity Dams, 190
- Hydrodynamic Interaction of Flexible Structures, 806
- Hydrodynamic Pressure on a Dam During Earthquakes, 216
- Soil Tunnel Test Section: Case History Summary, 305
- Vibration Problems in Geotechnical Engineering, 1023
- Groundwater**
- Dispersion in Anisotropic, Homogeneous, Porous Media, 365
- Exporting Colorado Water in Coal Slurry Pipelines, 739
- Ground-Water Reservoir Operation for Drought Management, 746
- Hydraulics and Hydrology in the Small Computer Age, 987
- Inventorying Ground Water in Crystalline Rocks of Piedmont Region, 745
- Saltwater Upconing in Unconfined Aquifers, 342
- Transition Zone Width in Ground Water on Ocean Atolls, 357
- Water Division at Low-Level Waste Disposal Sites, 95
- Water Quality Issues at Fossil Fuel Plants, 1024
- Groundwater depletion**
- Dewatering—Avoiding Its Unwanted Side Effects, 974
- Groundwater flow**
- Modeling Ground-Water Flow at Love Canal, New York, 16
- Numerical Determination of Aquifer Constants, 386
- Subregion Iteration of Finite Element Method for Large-Field Problems of Ground-Water Solute Transport, 350
- Groundwater pollution**
- 1-D Pollutant Migration in Soils of Finite Depth, 261
- Field Comparison of Three Mass Transport Models, 315
- Ground-Water Contamination in Silicon Valley, 749
- Ground-Water Protection in San Francisco Bay Area, 76
- Modeling Ground-Water Flow at Love Canal, New York, 16
- Groundwater recharge**
- Can We Save the Ogallala?, 906
- Electrical Resistivity for Estimating Ground-Water Recharge, 427
- Grout**
- Axial Strength of Grouted Pile-to-Sleeve Connections, 526
- Foam Grout Saves Tunnel, 924
- Grouting**
- Issues in Dam Grouting, 991
- Restoring the Capitol's West Front, 917
- Soil Nailing Supports Excavation, 859
- Guardrails**
- Ranking Low Guardrail Sites for Remedial Treatment, 708
- Guideway systems**
- Design and Construction of Dade County METROMOVER, 725
- Guideways**
- Dynamics of Steel Elevated Guideways—An Overview, 588
- Gusset plates**
- Cyclic Out-of-Plane Buckling of Double-Angle Bracing, 542
- Elastic Analysis of Gusseted Truss Joints, 631
- Tests of Full-Size Gusset Plate Connections, 513
- Guyed towers**
- Investigation of Wind Effects on a Tall Guyed Tower, 616
- Minimum Weight Sizing of Guyed Antenna Towers, 603
- Stiffness Properties of Fixed and Guyed Platforms, 485
- Tapping Deep Water Resources, 891
- Half space**
- Elastostatic Infinite Elements for Layered Half Spaces, 196
- Static Infinite Element Formulation, 619
- Harbor engineering**
- Dredging and Dredged Material Disposal, 975
- Harbor facilities**
- Congestion Cost and Pricing of Seaports, 782
- Optimal Berth and Crane Combinations in Containerports, 829
- Harbors**
- A Harbor Ray Model of Wave Refraction-Difraction, 760
- Hazardous materials**
- Environmental Engineering, 980
- Ground-Water Protection in San Francisco Bay Area, 76

- Hazardous waste**
Cay Clay Liners Work?, 860
Hazardous Waste Disposal as Concrete Admixture,
77
Waste Cleanup: Lessons Learned, 877
Hazardous waste sites
Clay Liner Permeability: Evaluation and Variation,
300
Hazardous Waste Cleanup: The Preliminaries, 907
Hazardous Waste Surface Impoundment Technology, 88
Spatial Estimation of Hazardous Waste Site Data,
98
Head losses
Cleaning and Lining Versus Parallel Mains, 728
Correction of Head Loss Measurements in Water
Mains, 672
Health hazards
NO₂ Exposure from Vehicles and Gas Stoves, 718
Heated water discharge
Circulation Induced by Coastal Diffuser Discharge,
823
Heating
Power Production and Air Conditioning by Solar
Ponds, 228
Heaving
Evaluation of Soil Response to EPB Shield Tun-
neling, 243
Heavy metals
Metal Distribution and Contamination in Sedi-
ments, 58
Heavy oil
Heavy Oil Mining—An Overview, 666
High strength bolts
Eccentrically Loaded High Strength Bolted Con-
nections, 534
High strength steel
High Strength Steel, 870
Highway
Use of Vegetation for Abatement of Highway
Traffic Noise, 722
Highway construction
Statistical Analysis of Specification Compliance,
690
Highway engineering
Innovative Strategies to Improve Urban Trans-
portation Performance, 990
Highway improvements
3R Standards Implementation, 677
Mathematical Programming for Highway Project
Analysis, 680
Methods Used to Evaluate Highway Improvements,
2
Highway maintenance
3R Standards Implementation, 677
Microcomputer Data Management System, 687
Highway management
Microcomputer Data Management System, 687
Highway planning
Methods Used to Evaluate Highway Improvements,
2
Highway safety
3R Standards Implementation, 677
Ranking Low Guardrail Sites for Remedial Treat-
ment, 708
Highway surfaces
Extension of CBR Method to Highway Pavements,
710
Overview of Skid Resistance on Ohio Pavements,
709
Highways
Research Needs Related to the Nation's Infra-
structure, 1006
Hinges
Hydrodynamic Pressures Acting Upon Hinged-Arc
Gates, 352
Hiring practices
What Do You Look for in a New Engineer?, 448
Historic sites
Saving the Lady, 832
Slurry Walls Protect Harvard Square, 948
Soil Nailing Supports Excavation, 859
Vibration Criteria for Historic Buildings, 33
History
Oral History: Saving the Past, 852
Plasticity and Constitutive Relations in Soil Me-
chanics, 265
Hollow sections
Local Buckling of Hollow Structural Sections, 540
Hot weather construction
Climatic Effects on Construction, 27
Houses
Rammed Earth House Construction, 306
Housing
Residential Real Estate Development in Saudi
Arabia, 721
Human behavior
Critical Human Technology Issues for Engineers,
466
Human ecology
NO₂ Exposure from Vehicles and Gas Stoves, 718
Human factors
Models for Human Error in Structural Reliability,
554
Sensitivity Analysis for Structural Errors, 579
Humidity
Climatic Effects on Construction, 27
Random Creep and Shrinkage in Structures:
Sampling, 541
Hurricanes
Hurricane Alicia: One Year Later, 986
Hurricane Damage on Galveston's West Beach, 595
Structural Performance and Wind Speed-Damage
Correlation in Hurricane Alicia, 634
Hydraulic conductivity

SUBJECT INDEX

Ice

- Drainage Coefficients for Heavy Land, 421
Hydraulic Conductivity of Two Prototype Clay Liners, 286
Hydraulic Conductivity Tests on Compacted Clay, 260
Rubble Mounds: Hydraulic Conductivity Equation, 811
- Hydraulic design**
Boardman Labyrinth—Crest Spillway, 341
Hydropower: Recent Developments, 988
- Hydraulic jump**
B-Jumps at Abrupt Channel Drops, 368
Generalized Water Surface Profile Computations, 340
Simplified Design of Contractions in Supercritical Flow, 370
- Hydraulic models**
Floating Breakwater Design, 778
Salt River Channelization Project: Model Study, 333
Stepped Spillway Hydraulic Model Investigation, 410
- Hydraulic structures**
Effective Length of Columns in Steel Radial Gates, 621
Optimal Design of Detention and Drainage Channel Systems, 732
- Hydraulics**
Analysis and Simulation of Low Flow Hydraulics, 408
Estimation of Hydraulic Data by Spline Functions, 392
Head-Discharge Relation for Vortex Shaft, 379
Hydraulics and Hydrology in the Small Computer Age, 987
Modeling of Flow Velocity Using Weirs, 320
- Hydrodynamic pressure**
Axisymmetrical Vibrations of Tanks—Analytical, 146
Axisymmetrical Vibrations of Tanks—Numerical, 145
Finite Element Modeling of Infinite Reservoirs, 218
Hydrodynamic Pressure on a Dam During Earthquakes, 216
Hydrodynamic Pressures Acting Upon Hinged-Arc Gates, 352
Internal Seismic Forces on Submerged Oil Tanks, 825
Model for Flexible Tanks Undergoing Rocking, 134
Seismically Induced Fluid Forces on Elevated Tanks, 664
Wave Load-Submarine Pipeline-Seafloor Interaction, 686
- Hydrodynamics**
Errors from Using Conservation of Buoyancy Concept in Plume Computations, 377
A Fifth-Order Stokes Theory for Steady Waves, 773
Hydrodynamic Coefficients and Depth Parameter, 766
Hydrodynamic Interaction of Flexible Structures, 806
Simplified Earthquake Analysis of Concrete Gravity Dams: Combined Hydrodynamic and Foundation Interaction Effects, 168
Simplified Earthquake Analysis of Concrete Gravity Dams: Separate Hydrodynamic and Foundation Interaction Effects, 169
Wave Forces on an Elliptic Cylinder, 787
Wave Forces on Inclined Circular Cylinder, 819
- Hydroelectric power**
Bath County Pumped Storage, 896
Helms Pumped Storage Project, 890
- Hydroelectric power generation**
Hydropower's Newest Generation, 909
Innovative Powerhouse Designs, 989
MDS Project—Main Dimensions and Economics, 232
- Hydrogeology**
Modeling Ground-Water Flow at Love Canal, New York, 16
- Hydrographs**
Overland Flow Hydrographs for SCS Type II Rainfall, 436
- Hydroelectric power**
Mini Hydro at Low Cost, 893
- Hydrologic models**
Evaluation of Hydrologic Models Used to Quantify Major Land-Use Change Effects, 413
Large Basin Deterministic Hydrology: A Case Study, 393
Simulator for Water Resources in Rural Basins, 375
- Hydrology**
Computer Applications in Water Resources, 963
Hydraulics and Hydrology in the Small Computer Age, 987
Marsh Enhancement by Freshwater Diversion, 726
Watershed Management in the Eighties, 1025
- Hypolimnion**
Dissolved Oxygen Model for a Dynamic Reservoir, 91
- Hysteresis**
Hysteretic Dampers in Base Isolation: Random Approach, 515
Local Instability Tests of Plate Elements under Cyclic Uniaxial Loading, 537
Random Vibration of Degrading, Pinching Systems, 186
Stochastic Evaluation of Seismic Structural Performance, 545
Torsional Instability in Hysteretic Structures, 156
- Hysteresis models**
On the Reliability of a Simple Hysteretic System, 221
Periodic Response of Yielding Oscillators, 184
Steady-State Dynamic Analysis of Hysteretic Systems, 222
- I beams**
Interaction of Plastic Local and Lateral Buckling, 607
- Ice**
Civil Engineering in the Arctic Offshore, 960

Ice cover

Ice cover

Influence of Marginal Ice Cover on Storm Surges, 780
Oil Slicks in Ice Covered Rivers, 339
Sediment Transport under Ice Cover, 373

Ice sheets

Rigid-Plastic Analysis of Floating Plates, 174

Impact

Dynamic Instability Analyses of Axially Impacted Columns, 178

Impact in Truss Bridge Due to Freight Trains, 135

Impact forces

Response of Semi-Submersibles in Ice Environment, 667

Impact loads

Constitutive Model for Loading of Concrete, 506

Impact Effect on R.C. Slabs: Analytical Approach, 569

Impact Studies on Small Composite Girder Bridge, 511

Plastic Response of Cantilevers with Stable Cracks, 175

Impact tests

Impact Tests on Frames and Elastic-Plastic Solutions, 213

Impedance

Experimental Foundation Impedance Functions, 277

Imperfections

Imperfect Columns with Biaxial Partial Restraints, 518

Inelastic Cyclic Analysis of Imperfect Columns, 546

Ultimate Load Behavior of Beams with Initial Imperfections, 550

Impervious membranes

Design Considerations for a Novel Landfill Liner, 84

Impoundments

Cay Clay Liners Work?, 860

Hazardous Waste Surface Impoundment Technology, 88

Seepage and Leakage from Dams and Impoundments, 1011

Impregnation

Developments in New and Existing Materials, 973

Impulsive loads

Constitutive Model for Loading of Concrete, 506

Impulsive Direct Shear Failure in RC Slabs, 574

Loads Due to Spectator Movements, 496

In situ tests

Flow Field Around Cones in Steady Penetration, 246

Settlement Analysis of Skirted Granular Piles, 303

Incineration

Municipal Refuse: Is Burning Best?, 862

Incipient motion

Bed Material Movement in Hyperconcentrated Flow, 376

1985 ASCE TRANSACTIONS

Incipient Sediment Motion and Riprap Design, 348

Industrial plants

Martin Marietta Complex, 900

Structural Design, Cementitious Products, and Case Histories, 1016

Industrial wastes

Land Treatment of Wastes: Concepts and General Design, 57

Stochastic Optimization/Simulation of Centralized Liquid Industrial Waste Treatment, 100

Industries

Transportation Requirements for High Technology Industrial Development, 703

Inelastic action

Design Spectra for Degrading Systems, 635

Inelastic Buckling of Steel Plates, 475

Inelastic Response of Tubular Steel Offshore Towers, 611

Random Vibration of Degrading, Pinching Systems, 186

Inelastic actions

Local Buckling of W Shape Columns and Beams, 8

Inertia

Comments on Cross-Flow Principle and Morison's Equation, 830

Morison Inertia Coefficients in Orbital Flow, 772

Infiltration

Nitrogen Removal in Rapid Infiltration Systems, 104

Overland Flow Hydrographs for SCS Type II Rainfall, 436

Similarity Solution of Overland Flow on Pervious Surface, 381

Infiltration rate

Furrow Irrigation Simulation Time Reduction, 424

Infinite elements

Static Infinite Element Formulation, 619

Inflatable structures

Shrimp Farm Made Feasible, 897

Inflow

Inflow Seepage Influence on Straight Alluvial Channels, 388

Information

Reducing Failures of Engineered Facilities, 1004

Information retrieval

Telecommunications Access to National Geodetic Survey Integrated Data Base, 647

Use of Computerized Databases in Legal Research, 650

Information systems

Computers and Group Communications: The Law: Forum Experiment, 652

An Information System for Building Products, 47

Information Systems in Surveying, 648

Infrastructure

Data Base in Your City's Future?, 935

Estimating Rural and Urban Infrastructure Needs, 114

SUBJECT INDEX

Japan

- Rebuilding America: Infrastructure Rehabilitation, 1003
Research Needs for Infrastructure Management, 723
Research Needs Related to the Nation's Infrastructure, 1006
User-Pay Funding and Creative Capital Financing, 113
- Innovation**
Research Needs Related to the Nation's Infrastructure, 1006
- Inspection**
Avoiding Contract Disputes, 958
Quality Control: A Neglected Factor, 843
Second-Guessing the Engineer, 939
Structural Safety Studies, 1018
- Instream flow**
Instream Flow Protection in Riparian States, 735
Satisfying Instream Flow Needs under Western Water Rights, 737
- Integral collocation method**
Nonlinear Analysis of Clamped Circular Plates, 622
- Interaction diagrams**
Composite Beam Design Using Interaction Diagram, 528
- Interfaces**
Cyclic Testing and Modeling of Interfaces, 276
Dominant Shear Stresses in Arrested Saline Wedges, 807
- Internal forces**
Internal Seismic Forces on Submerged Oil Tanks, 825
- Internal pressure**
Design Pressures in Circular Bins, 581
Linear Stress Analysis of Torospherical Head, 207
- Internal waves**
Dynamics of Internal Waves in Cylindrical Tank, 788
- Interpolation**
Estimation of Hydraulic Data by Spline Functions, 392
- Intersections**
Are Pedestrians Safe at Right-On-Red Intersections?, 668
- Interstate highways**
Biggest Highway Rebuild, 889
Drainage Tunnels Save Freeway Link, 915
- Interurban travel**
Performance Measures for New York State Inter-city Buses, 706
- Inventories**
Accounting for Every Pipe, 942
Inventorying Ground Water in Crystalline Rocks of Piedmont Region, 745
- Investment return analysis**
Micro-CAD: Can It Pay for Itself, 927
- Irrigation**
Brink Depth in Non-Aerated Overfalls, 445
- Drainage Required to Manage Salinity, 429
Evapotranspiration Model for Semiarid Regions, 443
Evapotranspiration of Small Conifers, 441
- Irrigation dams**
Mini Hydro at Low Cost, 893
- Irrigation efficiency**
Basin-Wide Impacts of Irrigation Efficiency, 433
Chemical Reactions within Root Zone of Arid Zone Soils, 430
Effect of Irrigation Efficiencies on Nitrogen Leaching Losses, 432
Electronic Clocks for Timing Irrigation Advance, 420
Report of Task Committee on Water Quality Problems Resulting from Increasing Irrigation Efficiency, 428
Salt Problems from Increased Irrigation Efficiency, 431
- Irrigation engineering**
Development and Management Aspects of Irrigation and Drainage Systems, 972
- Irrigation practices**
Automatic Throttle Hose—New Flow Regulator, 434
- Irrigation scheduling**
Irrigation Scheduling Using Crop Indicators, 423
Irrigation Water Requirements for Senegal River Basin, 435
- Irrigation systems**
Design of Stable Alluvial Canals in a System, 415
Irrigation System Study in International Basin, 734
Least-Cost Planning of Irrigation Systems, 442
Plastic Lining on Riverton Unit, Wyoming, 437
Procedure to Select an Optimum Irrigation Method, 439
- Irrigation water**
Agricultural Benefits for Senegal River Basin, 422
Chemical Reactions within Root Zone of Arid Zone Soils, 430
Efficient Water Use in Run-of-the-River Irrigation, 425
Irrigation Water Requirements for Senegal River Basin, 435
Reuse System Design for Border Irrigation, 426
- Isotropic material**
General Failure Criterion for Isotropic Media, 137
- Isotropy**
Stress Anisotropy Effects on Clay Strength, 254
- Iteration**
Dynamic Response of Tall Building to Wind Excitation, 521
Monotone Behavior of Trusses Under Two Loadings, 484
Subregion Iteration of Finite Element Method for Large-Field Problems of Ground-Water Solute Transport, 350
- Japan**
Improvement of Congestion Detection on Expressways, 693

- Jets**
Comparison of Two River Diffuser Models, 382
Errors from Using Conservation of Buoyancy Concept in Plume Computations, 377
Experimental Measurement of Multiple-Jet Induced Flow, 191
Free Jet Scour Below Dams and Flip Buckets, 330
Local Scour Downstream of an Apron, 403
Oblique Turbulent Jets in a Crossflow, 211
- Job opportunities**
Changing Jobs Successfully, 835
- Job satisfaction**
Absenteeism in Construction Industry, 465
Valence of and Satisfaction with Job Outcomes, 21
- Joints**
Behavior of Timber Joints with Multiple Nails, 532
Tubular Steel Trusses with Cropped Webs, 553
- Joints**
Wood Floor Behavior: Experimental Study, 628
- Kalman filter**
Prediction of Combined Snowmelt and Rainfall Runoff, 327
- River Flow Forecasting Model for the Sturgeon River, 336
- Kaolin**
Rate of Shear Effects on Vane Shear Strength, 241
- Kinematic wave theory**
Kinematic-Wave Method for Peak Runoff Estimates, 700
- Kinetics**
Nitrification in Water Hyacinth Treatment Systems, 94
Unified Analysis of Biofilm Kinetics, 90
- Labor relations**
Construction Productivity Improvement, 17
On Site Performance Improvement Programs, 23
- Laboratory tests**
Forces on Horizontal Cylinder Towed in Waves, 827
Plate Instability for W Shapes, 7
- Uplift Behavior of Anchor Foundations in Soil, 1022
- Lagrangian functions**
Lagrangian Continuum Theory for Saturated Porous Media, 205
- Lagrangian Approach to Design Sensitivity Analysis, 166
- Lakes**
Computer Animation of Storm Surge Predictions, 334
Computer Applications in Water Resources, 963
Dredging and Dredged Material Disposal, 975
Impact of Lake Acidification on Stratification, 101
Mixed-Layer Deepening in Lakes after Wind Setup, 396
- Laminar flow**
Acceleration Techniques for Coupled Nonlinear PDE's, 183
- Laminar Flow in Conduits of Unconventional Shape, 171
Regime of Oscillatory Flow, 764
- Land information systems**
Distributed Data Bases for Surveying, 656
Land Information Management: A Canadian Perspective, 657
Rationalizing Land Records, Mapping, Planning, 845
- Land management**
Information Systems in Surveying, 648
Land Information Management: A Canadian Perspective, 657
- Land treatment**
Land Treatment of Wastes: Concepts and General Design, 57
Nitrogen Removal in Rapid Infiltration Systems, 104
- Land usage**
Evaluation of Hydrologic Models Used to Quantify Major Land-Use Change Effects, 413
Land Information Management: A Canadian Perspective, 657
Rationalizing Land Records, Mapping, Planning, 845
Watershed Management in the Eighties, 1025
- Land usage planning**
A Tale of Two Cities: Light Rail Transit in Canada, 715
- Landfills**
Cay Clay Liners Work?, 860
Design Considerations for a Novel Landfill Liner, 84
Revegetation Using Coal Ash Mixtures, 85
- Lateral forces**
Lateral Force-Displacement Response of Buried Pipe, 293
- Lateral loads**
Behavior of Timber Joints with Multiple Nails, 532
Dynamax Lateral-Load Tests of R/C Column-Slabs, 514
Horizontal Response of Piles in Layered Soils, 5
Lateral Load Response of Flat-Plate Frame, 605
Rigid-Plastic Analysis of Floating Plates, 174
- Lateral pressure**
Active Earth Pressure Behind Retaining Walls, 257
Laminated Glass Units under Uniform Lateral Pressure, 536
Thin Glass Plates on Elastic Supports, 623
- Lateral stability**
Lateral Stability of Beams with Elastic End Restraints, 155
Stability of Continuously Restrained Cantilevers, 217
- Lateral stress**
Lateral Stresses Observed in Two Simple Shear Apparatus, 271
- Lattices**
Design of Cold-Formed Latticed Transmission Towers, 624

SUBJECT INDEX

Liquefaction

- Post-Buckling Equilibrium of Hyperstatic Lattices, 143
Stability of Frames with Tapered Built-up Members, 594
Law, jurisprudence
Use of Computerized Databases in Legal Research, 650
Layered soils
Bearing Capacity of Gravity Bases on Layered Soil, 272
Solution of Base Stability Analysis in Layered Soils, 291
Leachates
Cay Clay Liners Work?, 860
Design Considerations for a Novel Landfill Liner, 84
Phosphogypsum Waste Anion Removal by Soil Minerals, 93
Leaching
Basin-Wide Impacts of Irrigation Efficiency, 433
Drainage Required to Manage Salinity, 429
Effect of Irrigation Efficiencies on Nitrogen Leaching Losses, 432
Leaching of Tetrachloroethylene from Vinyl-Lined Pipe, 49
Report of Task Committee on Water Quality Problems Resulting from Increasing Irrigation Efficiency, 428
Leadership
Engineers as Managers, 456
Entering Technical Management, 461
Leakage
Leakage from Ruptured Submarine Oil Pipeline, 711
Seepage and Leakage from Dams and Impoundments, 1011
Trouble in Our Own Back Yard, 841
Volumetric Approach to Type Curves in Leaky Aquifers, 345
Legal aspects
Shop Drawing Review: Minimizing the Risks, 857
Legal factors
Coping with Litigation, 882
Use of Computerized Databases in Legal Research, 650
Length
Effective Length of a Fractured Wire in Wire Rope, 182
Levees
Stage Frequency Analysis at a Major River Junction, 351
Liability
Get Involved with Cladding Design, 885
Liability: Attitudes and Procedures, 468
Professional Liability of the Architect and Engineer, 115
Shop Drawing Review: Minimizing the Risks, 857
Licensing
Issues in Engineering Education, 120
Seismic Experience Data—Nuclear and Other Plants, 1012
Solid Waste Management for Utility Reconversions, 229
Life cycles
What Do Pavements Cost?, 944
Lift
Wake Displacement as Cause of Lift Force on Cylinder Pair, 132
Light
Attenuation Versus Transparency, 78
Light attenuation
Impact of Lake Acidification on Stratification, 101
Limit analysis
Elastic-Plastic-Softening Analysis of Plane Frames, 525
Limit State Analysis of Arch Segment, 557
Partial Moment Redistribution in Cold-Formed Steel, 544
Partial Stress Redistribution in Cold-Formed Steel, 543
Limit design
Flexural Limit Design of Column Footings, 613
Limit States Criteria for Masonry Construction, 476
Partial Moment Redistribution in Cold-Formed Steel, 544
Partial Stress Redistribution in Cold-Formed Steel, 543
Limit design method
Advances in Short Span Steel Bridges, 938
Design of Slender Webs Having Rectangular Holes, 519
Relative Reliability of Dimension Lumber in Bending, 592
Limit equilibrium
Stability of Membrane Reinforced Slopes, 304
Linear programming
Deterministic Linear Programming Model for Acid Rain Abatement, 56
Minimum-Cost Design of Flexible Pavements, 683
Linear systems
Dynamic Analysis of Structures by the DFT Method, 636
Negative Outflows from Muskingum Flood Routing, 378
Response Maxima of a SDOF System under Seismic Action, 598
Liners
Design Considerations for a Novel Landfill Liner, 84
Liquefaction
Confining Pressure, Grain Angularity, and Liquefaction, 301
Effect of Initial Shear on Cyclic Behavior of Sand, 311
The Influence of SPT Procedures in Soil Liquefaction Resistance Evaluations, 313
Liquefaction Evaluation Procedure, 275
Liquefaction Potential Mapping for San Francisco, 237
Liquefaction Potential of Sands Using the CPT, 256

- Liquefaction Resistance of Thickened Tailings, 310
Measurement and Use of Shear Wave Velocity for Evaluating Dynamic Soil Properties, 994
New Method for Evaluating Liquefaction Potential, 239
- Litigation**
Coping with Litigation, 882
Negotiation and Contract Management, 995
- Littoral currents**
Finite Element Modelling of Nonlinear Coastal Currents, 786
- Littoral drift**
Episodicity in Longshore Sediment Transport, 794
Seawall Constraint in the Shoreline Numerical Model, 831
- Live loads**
Loads Due to Spectator Movements, 496
- Load bearing capacity**
Collapse Loads of Continuous Orthotropic Bridges, 585
Slashing Tunnel Costs, 936
Wood Floor Behavior: Experimental Study, 628
- Load combinations**
Approximations for Moments in Box Girders, 617
Limit States Criteria for Masonry Construction, 476
Reliability of Systems under Renewal Pulse Loading, 198
- Load distribution**
Gable Frame Design Considerations, 566
- Load duration**
Nonlinear Response to Sustained Load Processes, 478
Triple Power Law for Concrete Creep, 130
- Load factors**
Advances in Short Span Steel Bridges, 938
Gable Frame Design Considerations, 566
- Load tests**
Drilled Piers and Caissons II, 976
Load Tests on Tubular Piles in Coralline Strata, 268
Test of Four-Panel Post-Tensioned Flat Plate, 590
- Load tests, foundations**
Performance of a Stone Column Foundation, 247
- Load transfer**
Elastostatic Infinite Elements for Layered Half Spaces, 196
Loading Rate Method for Pile Response in Clay, 252
- Loading history**
Large Deflected Plates and Shells with Loading History, 164
- Loading rate**
Loading Rate Method for Pile Response in Clay, 252
- Loads**
Appropriate Forms in Nonlinear Analysis, 201
Formwork Design, 45
Glass Strength Degradation under Fluctuating

- Loads, 560
Load History Effects on Structural Members, 510
Moment Determination for Moving Load Systems, 556
- Locks**
Locks with Devices to Reduce Salt Intrusion, 826
- Logistics**
Channel Scouring Potential Using Logistic Analysis, 328
- Low flow**
Analysis and Simulation of Low Flow Hydraulics, 408
- Low-rise buildings**
Wind-Induced Fatigue on Low Metal Buildings, 522
- Machine foundations**
Vibration Problems in Geotechnical Engineering, 1023
- Magnetic levitation trains**
High-Speed Rail Systems in the United States, 673
- Maintenance**
Stormwater Detention Outlet Control Structures, 1015
- Maintenance costs**
Design, Construction and Maintenance of Torrijos Airport, 681
- Management**
Dredging and Dredged Material Disposal, 975
Entering Technical Management, 461
Establishing a Professional Practice, 463
- Management methods**
A Gradualist's Approach to Management, 459
Harmonizing Organizational and Personal Needs, 467
Liability: Attitudes and Procedures, 468
Management Secrets of Top Consultants, 905
Managing Public Works: How the Best Do It, 833
Research Needs for Infrastructure Management, 723
- Management systems**
Construction QA/QC Systems that Work: Case Studies, 967
How Do Engineers Learn to Manage?, 846
- Management training**
Development of an Engineering Manager, 450
Engineers as Managers, 456
How Do Engineers Learn to Manage?, 846
- Mapping**
The Surveyor and Written Boundary Agreements, 662
- Maps**
Data Base in Your City's Future?, 935
- Marine clays**
State Variable Model for Volumetric Creep of Clay, 129
- Market research**
Specialization as a Strategy for Growth, 464

SUBJECT INDEX

- Marketing**
The Client Relationship: Effective Marketing Steps, 446
- Markov chains**
Markov Renewal Model for Maximum Bridge Loading, 192
- Markov process**
Extreme Winds Simulated from Short-Period Records, 474
- Markov Renewal Model for Maximum Bridge Loading, 192
- Marshes**
Marsh Enhancement by Freshwater Diversion, 726
- Masonry**
Flexural Strength of Masonry Prisms versus Wall Panels, 597
- Limit States Criteria for Masonry Construction, 476
- Mechanics of Masonry in Compression, 524
- New Analysis Techniques for Structural Masonry, 996
- Mass transfer**
External Mass-Transfer Rate in Fixed-Bed Adsorption, 106
- A Standard for the Measurement of Oxygen Transfer in Clean Water, 1013
- Volatilization Rates of Organic Chemicals of Public Health Concern, 97
- Mass transport**
Field Comparison of Three Mass Transport Models, 315
- Water Particle Velocities in Regular Waves, 771
- Materials engineering**
Developments in New and Existing Materials, 973
- Materials, properties**
Field Aging of Fixed Sulfur Dioxide Scrubber Waste, 231
- High Strength Steel, 870
- Inelastic Buckling of Steel Plates, 475
- Structural Plastics Selection Manual, 1017
- Third-Variant Plasticity Theory for Low-Strength Concrete, 158
- Materials tests**
Biaxial Stress-Strain Relations for Brick Masonry, 539
- Catalytic Modification of Road Asphalt by Polyethylene, 671
- Statistical Analysis of Specification Compliance, 690
- Structural Plastics Selection Manual, 1017
- Mathematical models**
Analysis and Simulation of Low Flow Hydraulics, 408
- Bed Topography in Bends of Sand-Silt Rivers, 405
- Danger: Natural System Modeled by Computer, 908
- Dimensionless Formulation of Furrow Irrigation, 444
- Distortions Associated with Random Sea Simulators, 800
- Flow under Tilt Surface for High-Rate Settling, 67
- Meteorological data**
Hydrodynamic Pressures Acting Upon Hinged-Arc Gates, 352
- Leakage from Ruptured Submarine Oil Pipeline, 711
- Mathematical Model to Predict 3-D Wind Loading on Building, 141
- Mathematical Models within Geodetic Frame, 658
- Model of Dispersion in Coastal Waters, 316
- Modeling of Unsteady Flows in Alluvial Streams, 332
- Overland Flow Hydrographs for SCS Type II Rainfall, 436
- Prediction of 2-D Bed Topography in Rivers, 391
- Similarity Solution of Overland Flow on Pervious Surface, 381
- Uniaxial Cyclic Stress-Strain Behavior of Structural Steel, 193
- Unified Analysis of Biofilm Kinetics, 90
- Water and Sediment Routing Through Curved Channels, 356
- Maximum load**
Wave Forces on Vertical Walls, 805
- Meandering streams**
Formation of Alternate Bars, 406
- Measurement**
A Standard for the Measurement of Oxygen Transfer in Clean Water, 1013
- Measuring instruments**
Automated Remote Recording and Analysis of Coastal Data, 784
- Bore Height Measurement with Improved Wave-staff, 791
- Temperature Effects on Volume Measurements, 242
- Mechanical properties**
A Method for Finding Engineering Properties of Sealants, 177
- Membranes**
Stability of Membrane Reinforced Slopes, 304
- Membranes, linings**
Plastic Lining on Riverton Unit, Wyoming, 437
- Memoirs of deceased members**
Burnett, Daniel H., 1027
- Farmer, Edward August, 1028
- Fritts, Donald Loyd, 1029
- Harrar, Robert Kenneth, 1030
- Hinton, Julian Pitts, 1031
- Hume, Ritchey, 1032
- Jarvis, Ross F., 1033
- Johnson, Alfred Massey Fisher, 1034
- Pederson, Lyle Perry, 1035
- Rhodes, Fred Harold, Jr., 1036
- Sackett, Guy Woodford, 1037
- Samuel, Thomas D. III, 1038
- Tschebotarioff, Gregory P., 1026
- Wiersema, Harry Anthony, 1039
- Meteorological data**
Extended Streamflow Forecasting Using NWSRFS, 736
- Meteorology**

Meteorology

- Hurricane Alicia: One Year Later, 986
Methane
Performance of Expanded-Bed Methanogenic Reactor, 79
Microcomputers
Frame Moments with the Takabeya Method, 844
Micro-CAD: Can It Pay for Itself, 927
Micro-CAD Systems: A Dream Come True, 880
Microcomputer Data Management System, 687
The Microcomputer in C.E. Education: A Survey, 665
Micros Go Afield, 839
Portables Pay Off, 932
Project Management on a Micro, 931
Migration
Leaching of Tetrachloroethylene from Vinyl-Lined Pipe, 49
Mines
Blind Drilling Down Under, 913
Minimum weight design
Maximum Strength Design of Structural Frames, 549
Monotone Behavior of Trusses Under Two Loadings, 484
Mining
Heavy Oil Mining—An Overview, 666
Minority groups
Civil Engineering and Engineering Enrollments, 116
Mississippi River
Lower Mississippi Salinity Analysis, 335
Lower Mississippi Valley Floods of 1982 and 1983, 754
Mixing
Algorithm for Mixing Problems in Water Systems, 329
Circulation Structure in a Stratified Cavity Flow, 337
Comparison of Two River Diffuser Models, 382
Initial Dilution for Outfall Parallel to Current, 366
Stochastic Priority Model for Aggregate Blending, 43
Transition Zone Width in Ground Water on Ocean Atolls, 357
Mode acceleration
Seismic Floor Spectra by Mode Acceleration Approach, 214
Model tests
Direct Model Test of Stub Girder Floor System, 563
Models
Analytical Diffusion Model for Flood Routing, 343
Flux Use for Calibrating and Validating Models, 66
On the Determination of Foundation Model Parameters, 308
Problems with Modeling Real-Time Reservoir Operations, 750
Qualitative Description of Wave Breaking, 770
Moisture content

1985 ASCE TRANSACTIONS

- Blowup of Concrete Pavements, 670
Moment distribution
Flexure of Statically Indeterminate Cracked Beams, 223
Partial Moment Redistribution in Cold-Formed Steel, 544
Warping Moment Distribution, 498
Moments
Beam Analogy for Vertical Curves, 951
Curved Bridge Decks: Analytical Strip Solution, 564
Fiber Reinforced Beams Under Moment and Shear, 503
Monitoring
Expert Systems for Construction Project Monitoring, 39
Multi-Objective Analysis with Subjective Information, 752
Optimization of Water Quality Monitoring Networks, 757
Monte Carlo method
Estimating Elastic Constants and Strength of Discontinuous Rock, 279
Estimation of Hydraulic Data by Spline Functions, 392
On the Reliability of a Simple Hysteretic System, 221
Slope Reliability and Response Surface Method, 236
Spatially Varying Rainfall and Floodrisk Analysis, 362
Stochastic Model of Suspended Solid Dispersion, 319
Mortars
Flexural Strength of Masonry Prisms versus Wall Panels, 597
Strength of Resin Mortar Tunnel, 225
Testing of Cement-Mortar Lined Carbon Steel Pipes, 669
Motivation
A Gradualist's Approach to Management, 459
Managing Productivity During an Attrition Program, 451
Motivating and Managing Engineers, 112
On Site Performance Improvement Programs, 23
Valence of and Satisfaction with Job Outcomes, 21
Mountain streams
Estimating Mean Velocity in Mountain Rivers, 354
Flow Resistance Estimation in Mountain Rivers, 355
Movable bed models
Salt River Channelization Project: Model Study, 333
Multiple objective analysis
Multi-Objective Analysis with Subjective Information, 752
Multi-Objective Decision-Making in Waste Disposal Planning, 73
Multiple purpose projects
Agricultural Benefits for Senegal River Basin, 422

SUBJECT INDEX

- Mixed Use, Mixed Materials, 850
Multi-post diffuser
Circulation Induced by Coastal Diffuser Discharge, 823
Multistory buildings
Simplified Earthquake Analysis of Multistory Structures With Foundation Uplift, 641
Municipal wastes
Bound Glass in Shredded Municipal Solid Waste, 233
Demoresearch for Resource and Energy Recovery, 111
Is There Grit in Your Sludge?, 864
Land Treatment of Wastes: Concepts and General Design, 57
Municipal Refuse: Is Burning Best?, 862
Nails
Behavior of Timber Joints with Multiple Nails, 532
National Weather Service
Extended Streamflow Forecasting Using NWSRFS, 736
Natural frequency
Dynamic Analysis of Orthotropic Plate Structures, 187
Navier-Stokes equations
Two-Equation Turbulence Model for Flow in Trenches, 6
Navigation
Deep-Draft Navigation Project Design, 759
Locks with Devices to Reduce Salt Intrusion, 826
Nearshore circulation
Episodicity in Longshore Sediment Transport, 794
Negotiations
Negotiating Contracts, 941
Negotiation and Contract Management, 995
Networks
BITNET: Inter-University Computer Network, 653
Distributed Data Bases for Surveying, 656
Local Area Networks, 654
Role of Telecommunications in Timekeeping, 651
Telecommunications Access to National Geodetic Survey Integrated Data Base, 647
New Jersey
State Water Supply Management in New Jersey, 744
New York, State of
Performance Measures for New York State Inter-city Buses, 706
Nitrates
Reservoir Modeling to Develop AWT Nitrate Standard, 12
Nitrification
Nitrification in Water Hyacinth Treatment Systems, 94
Nitrogen Accountability for Fertile Streams, 75
Nitrogenous Wastewater Treatment by Activated Algae, 53
Nitrogen
- Nonlinear response**
- Effect of Irrigation Efficiencies on Nitrogen Leaching Losses, 432
Nitrogen Accountability for Fertile Streams, 75
Nitrogen Removal in Rapid Infiltration Systems, 104
Nitrogenous Wastewater Treatment by Activated Algae, 53
Report of Task Committee on Water Quality Problems Resulting from Increasing Irrigation Efficiency, 428
Reservoir Modeling to Develop AWT Nitrate Standard, 12
Simultaneous In-Stream Nitrogen and D.O. Balancing, 74
Nitrogen dioxide
NO₂ Exposure from Vehicles and Gas Stoves, 718
Noise
Theory for Thermally Induced Roof Noise, 615
Noise control
Noise and Vibration Measurement: Prediction and Mitigation, 998
Noise measurement
Noise and Vibration Measurement: Prediction and Mitigation, 998
Noise reduction
Use of Vegetation for Abatement of Highway Traffic Noise, 722
Nomographs
Nomogram for Velocities of Partial Flows in Sewers, 62
Nondestructive tests
Drilled Piers and Caissons II, 976
Dynamics of Falling Weight Deflectometer, 714
Microcomputer Based Free Torsional Vibration Test, 287
Use of NDT and Pocket Computers in Pavement Evaluation, 688
Nonlinear analysis
Application of NLFEA to Concrete Structures, 640
Appropriate Forms in Nonlinear Analysis, 201
Minimum Weight Sizing of Guyed Antenna Towers, 603
Nonlinear Analysis of Plates with Plastic Orthotropy, 609
Nonlinear Dynamic Analyses of an Earth Dam, 281
Nonlinear Static and Dynamic Analysis of Plates, 136
Reliability of Ductile Systems with Random Strengths, 551
Review of Nonlinear FE Methods with Substructures, 212
Snap-Through and Bifurcation in a Simple Structure, 179
Thin Glass Plates on Elastic Supports, 623
Transmitting Boundaries and Seismic Response, 244
Nonlinear differential equations
Hydrodynamic Pressure on a Dam During Earthquakes, 216
Nonlinear response
Nonlinear Hysteretic Dynamic Response of Soil

Nonlinear response

- Systems, 167
- Nonlinear Response to Sustained Load Processes, 478
- Optimization Issues in the Design and Control of Large Space Structures, 999

Nonlinear systems

- River Flood Routing by Nonlinear Muskingum Method, 409

Normal strain

- Effects of Shear and Normal Strain on Plate Bending, 195

Nuclear energy

- Transition in the Nuclear Industry, 1020

Nuclear power plant decommissioning

- Transition in the Nuclear Industry, 1020

Nuclear power plants

- Seismic Experience Data—Nuclear and Other Plants, 1012

- Transition in the Nuclear Industry, 1020

Nuclear reactor containment

- Containments for Limerick and Susquehanna Plants, 230

- Friction Coefficient of Steel on Concrete or Grout, 502

Nuclear safety

- Design of Structures to Resist Nuclear Weapons Effects, 971

- Seismic Experience Data—Nuclear and Other Plants, 1012

Nuclear weapons

- Design of Structures to Resist Nuclear Weapons Effects, 971

Numerical analysis

- Simulation of Two-Fluid Response in Vicinity of Recovery Wells, 390

Numerical models

- 3-D Model of Bathymetric Response to Structures, 769

- Acceleration Techniques for Coupled Nonlinear PDE's, 183

- Beach Evolution Caused by Littoral Drift Barrier, 802

- Finite Element Modelling of Nonlinear Coastal Currents, 786

- Numerical Prediction of Wave Transformation, 815

- Refraction-Diffraction Model for Linear Water Waves, 821

- Rubble Mounds: Numerical Modeling of Wave Motion, 812

- Seawall Constraint in the Shoreline Numerical Model, 831

Objectives

- Harmonizing Organizational and Personal Needs, 467

Ocean disposal

- Sewage-Related Wastes and Oceans: A Problem?, 126

Ocean engineering

- Coastal Zone '85, 961

- A Fifth-Order Stokes Theory for Steady Waves, 773

1985 ASCE TRANSACTIONS

- Finite Water Depth Effects on Nonlinear Waves, 785

- Wave Forces on an Elliptic Cylinder, 787

- Wave Forces on Inclined Circular Cylinder, 819

- Wave Interference Effects by Finite Element Method, 758

Ocean resources

- Coastal Zone '85, 961

Ocean waves

- Finite Water Depth Effects on Nonlinear Waves, 785

- Velocity Moments in Nearshore, 774

Offshore engineering

- Civil Engineering in the Arctic Offshore, 960

Offshore pipelines

- Collapse of Thick Wall Pipe in Ultra Deep Water, 704

- Leakage from Ruptured Submarine Oil Pipeline, 711

Offshore platforms

- Offshore Platform Fatigue Cracking Probability, 573

- Punch-Through Instability of Jack-Up on Seabed, 264

- Stiffness Properties of Fixed and Guyed Platforms, 485

- Tapping Deep Water Resources, 891

- Wind-Induced Response Analysis of Tension Leg Platforms, 472

Offshore structures

- Axial Strength of Grouted Pile-to-Sleeve Connections, 526

- Design Strengths for an Offshore Clay, 253

- FEM Solution of 3-D Wave Interference Problems, 803

- Force Spectra from Partially Submerged Circular Cylinders in Random Seas, 816

- Hydrodynamic Interaction of Flexible Structures, 806

- Inelastic Response of Tubular Steel Offshore Towers, 611

- Inverted Shear Modulus from Wave-Induced Soil Motion, 240

- Latent Heat of Frozen Saline Coarse-Grained Soil, 266

- Response of Variable Cross-Sectional Members to Waves, 781

- Vortex-Induced Oscillation of Structures in Water, 777

- Wave Forces on an Elliptic Cylinder, 787

- Wave Forces on Inclined Circular Cylinder, 819

- Wave Interference Effects by Finite Element Method, 758

Ohio River

- Streambank Stability, 267

Oil pipelines

- Leakage from Ruptured Submarine Oil Pipeline, 711

Oil recovery

- Heavy Oil Mining—An Overview, 666

- Project Mixes Oil and Water, 895

SUBJECT INDEX

Oil spills

Leakage from Ruptured Submarine Oil Pipeline, 711

Oil Slicks in Ice Covered Rivers, 339

Open channel flow

Bed Shear From Velocity Profiles: A New Approach, 324

Brink Depth in Non-Aerated Overfalls, 445

Equations for Plane, Moderately Curved Open Channel Flows, 349

Free Flow Discharge Characteristics of Throatless Flumes, 417

Generalized Water Surface Profile Computations, 340

Kinematic Shock: Sensitivity Analysis, 353

LDA Measurements in Open Channel, 323

Modified Venturi Channel, 414

On the Determination of Ripple Geometry, 389

Overbank Flow with Vegetatively Roughened Flood Plains, 395

Simplified Design of Contractions in Supercritical Flow, 370

Stability of Dynamic Flood Routing Schemes, 412

Stochastic Model of Suspended Solid Dispersion, 319

Subdivision Froude Number, 384

Open channels

Channel Scouring Potential Using Logistic Analysis, 328

Inflow Seepage Influence on Straight Alluvial Channels, 388

Transport of Suspended Material in Open Submerged Streams, 363

Water Surface at Change of Channel Curvature, 369

Openings

Fiber-Reinforced Concrete Deep Beams with Openings, 575

Operating costs

Impact of Conservation on Rates and Operating Costs, 738

Optimal design

Lagrangian Approach to Design Sensitivity Analysis, 166

Optimal Design of Detention and Drainage Channel Systems, 732

Optimal Expansion of Water Distribution Systems, 59

Optimum Building Design for Forced-Mode Compliance, 197

Optimum Characteristics of Isolated Structures, 642

Optimum Design of Trusses with Buckling Constraints, 568

Particles, Pretreatment, and Performance in Water Filtration-*b*Environmental Engineering, James C. O'Shaughnessy, ed., 1985, 13

Particles, Pretreatment, and Performance in Water Filtration, 105

Sensitivity of Reliability-Based Optimum Design, 577

Structural Optimization Using Reliability Concepts, 614

Outfall sewers

Optimization

Channel Scouring Potential Using Logistic Analysis, 328

Determination of Critical Slope Failure Surfaces, 249

Deterministic Linear Programming Model for Acid Rain Abatement, 56

Minimum Weight Sizing of Guyed Antenna Towers, 603

Optimization Issues in the Design and Control of Large Space Structures, 999

Optimization of Water Quality Monitoring Networks, 757

Pricing and Expansion of a Water Supply System, 727

Pumped Wastewater Collection Systems Optimization, 87

Stochastic Optimization/Simulation of Centralized Liquid Industrial Waste Treatment, 100

Optimization models

Generating Designs for Wastewater Systems, 92

Modeling the California State Water Project, 731

Optimal Design of Detention and Drainage Channel Systems, 732

Optimization Model for Aggregate Blending, 34

Stochastic Priority Model for Aggregate Blending, 43

Organic chemicals

Volatilization Rates of Organic Chemicals of Public Health Concern, 97

Organic compounds

Removal of Organic Matter in Water Treatment, 103

Organization theory

A Gradualist's Approach to Management, 459

Organizational policy

Liability: Attitudes and Procedures, 468

Orthotropic plate

Dynamic Analysis of Orthotropic Plate Structures, 187

Orthotropism

Nonlinear Analysis of Plates with Plastic Orthotropy, 609

Oscillations

Analysis and Stability of Closed Surge Tanks, 383

Entrained and Bed-Load Sand Concentrations in Waves, 796

Turbulent Viscosity in Rough Oscillatory Flow, 793

Vortex-Induced Oscillation of Structures in Water, 777

Oscillators

On the Reliability of a Simple Hysteretic System, 221

Periodic Response of Yielding Oscillators, 184

Outfall sewers

Initial Dilution for Outfall Parallel to Current, 366

Model of Dispersion in Coastal Waters, 316

Outfall Dilution: The Role of a Far-Field Model, 80

San Francisco Outfall: The Champ?, 952

Seawater Circulation in Sewage Outfall Tunnels,

Outflows

- 367
- Outflows**
Negative Outflows from Muskingum Flood Routing, 378
- Overburden**
Measurement and Use of Shear Wave Velocity for Evaluating Dynamic Soil Properties, 994
- Overflow**
Brink Depth in Non-Aerated Overfalls, 445
Spillage over an Inclined Embankment, 397
- Overland flow**
Modeling of Rainfall Erosion, 400
Overland Flow Hydrographs for SCS Type II Rainfall, 436
Similarity Solution of Overland Flow on Pervious Surface, 381
- Overpasses**
Flyovers and High Flow Arterial Concept, 678
- Overseas assignments**
Managing Construction of Israeli Air Bases in Negev--A Personal Perspective, 469
- Owners**
Construction Claims: Frequency and Severity, 22
Private versus Public Ownership of Constructed Facilities, 458
- Oxidation**
Auto-Oxidation Effect on Flue Gas Sludge Systems, 227
- Oxygen transfer**
Performance of Surface Rotors in an Oxidation Ditch, 54
A Standard for the Measurement of Oxygen Transfer in Clean Water, 1013
- Oxygenation**
Performance of Surface Rotors in an Oxidation Ditch, 54
- Panama**
Design, Construction and Maintenance of Torrijos Airport, 681
- Parameters**
Analysis of Plates on a Kerr Foundation Model, 210
On the Determination of Foundation Model Parameters, 308
Optimization Issues in the Design and Control of Large Space Structures, 999
Procedure to Select an Optimum Irrigation Method, 439
River Flood Routing by Nonlinear Muskingum Method, 409
- Parks**
Estimating Recreational Travel and Economic Values of State Parks, 724
- Particle distribution**
Particles, Pretreatment, and Performance in Water Filtration-b*Environmental Engineering*, James C. O'Shaughnessy, ed., 1985, 13
Particles, Pretreatment, and Performance in Water Filtration, 105

Particle interactions

- A Critique of Camp and Stein's RMS Velocity Gradient, 96
- Particle motion**
Fall Velocity of Particles in Oscillating Flow, 346
Modified Approach to Evaluate Column Test Data, 63
- Particle size**
Particles, Pretreatment, and Performance in Water Filtration-b*Environmental Engineering*, James C. O'Shaughnessy, ed., 1985, 13
Particles, Pretreatment, and Performance in Water Filtration, 105
- Particle size distribution**
Bound Glass in Shredded Municipal Solid Waste, 233
- Particles**
Water Particle Velocities in Regular Waves, 771
- Particulate air pollutants**
Horizontal Elutriator Preliminary Test Results under Nonstill Air Conditions, 60
- Pavement condition**
Rating Pavements by Computer, 933
Use of NDT and Pocket Computers in Pavement Evaluation, 688
- Pavement damage**
Blowup of Concrete Pavements, 670
- Pavement deflections**
Dynamics of Falling Weight Deflectometer, 714
Extension of CBR Method to Highway Pavements, 710
- Pavement design**
Comparison of Two Rigid Pavement Design Methods, 713
Development of Color Pavement in Korea, 691
Extension of CBR Method to Highway Pavements, 710
Minimum-Cost Design of Flexible Pavements, 683
- Pavement overlays**
Portland Cement Concrete Thin-Bonded Overlay, 38
- Pavement recycling**
Biggest Highway Rebuild, 889
New Pavement from Old Concrete, 872
- Pavements**
3R Standards Implementation, 677
Blowup of Concrete Pavements, 670
Catalytic Modification of Road Asphalt by Polyethylene, 671
Cyclic Behavior of Pavement Base Materials, 234
Dynamics of Falling Weight Deflectometer, 714
Engineering with Fabric, 950
Multi-Attribute Utility in Pavement Rehabilitation Decisions, 701
Overview of Skid Resistance on Ohio Pavements, 709
What Do Pavements Cost?, 944
- Peak runoff**
Kinematic-Wave Method for Peak Runoff Esti-

SUBJECT INDEX

- mates, 700
- Pedestrian safety**
Are Pedestrians Safe at Right-On-Red Intersections?, 668
- Pedestrian traffic flow**
Acceptable Walking Distances in Central Areas, 696
- Pedestrian Traffic on Cincinnati Skywalk System, 674
- Penetration**
Strain Path Method, 295
- Penetration resistance**
Dynamic Determination of Pile Capacity, 255
- People movers**
Automated People Movers: Engineering and Management in Major Activity Centers, 957
- Percolation**
Drainage Required to Manage Salinity, 429
- Salt Problems from Increased Irrigation Efficiency, 431
- Performance**
On Site Performance Improvement Programs, 23
- Performance characteristics**
Relative Reliability of Dimension Lumber in Bending, 592
- Performance evaluation**
General Contractors' Management: How Subs Evaluate It, 36
- A Performance Review System, 453
- Productivity of Construction Professionals, 449
- Performance rating**
Communicating the Company's Operating Performance Data, 447
- Earned Value Technique for Performance Measurements, 454
- Periodic functions**
Periodic Response of Yielding Oscillators, 184
- Permafrost**
Foundations in Permafrost and Seasonal Frost, 983
- Freezing and Thawing of Soil-Water Systems, 985
- Thaw Settlement Analysis for Buried Pipelines in *Permafrost-bPipelines in Adverse Environments II*, Mark Pickell, ed., 1983, I
- Permeability**
Characteristics of Free Surface Flow Over a Gravel Bed, 438
- Clay Liner Permeability: Evaluation and Variation, 300
- Settlement Analysis of Embankments on Soft Clays, 259
- Permeability tests**
Hydraulic Conductivity of Two Prototype Clay Liners, 286
- Hydraulic Conductivity Tests on Compacted Clay, 260
- Permeameters**
Hydraulic Conductivity Tests on Compacted Clay, 260
- Personnel**
Valence of and Satisfaction with Job Outcomes, 21
- What Do You Look for in a New Engineer?, 448
- Personnel development**
How Do Engineers Learn to Manage?, 846
- Personnel management**
Managing Public Works: How the Best Do It, 833
- A Performance Review System, 453
- Productivity of Construction Professionals, 449
- Selecting the Correct Retirement Plan for Your Business, 455
- Perturbation theory**
Dynamic Characterization of Two-Degree-of-Freedom Equipment-Structure Systems, 127
- Phosphorus removal**
Nitrogen Removal in Rapid Infiltration Systems, 104
- Phosphogypsum Waste Anion Removal by Soil Minerals, 93
- Phosphorus Reduction for Control of Algae, 86
- Water Quality and Regional Water Supply Planning, 742
- Piers**
Pier Review, 921
- Pile bearing capacities**
Dynamic Determination of Pile Capacity, 255
- Effects of Predrilling and Layered Soils on Piles, 235
- Real and Apparent Relaxation of Driven Piles, 248
- Pile driving**
Dynamic Determination of Pile Capacity, 255
- Real and Apparent Relaxation of Driven Piles, 248
- Vibration Criteria for Historic Buildings, 33
- Vibration Problems in Geotechnical Engineering, 1023
- Pile foundation performance**
Strain Path Method, 295
- Pile foundations**
Seismic Response of Pile Supported Cooling Towers, 591
- Settlement Analysis of Skirted Granular Piles, 303
- Pile groups**
Dynamic Behavior of Pile Groups in Inhomogeneous Soil, 309
- Pile load tests**
Foundations in Permafrost and Seasonal Frost, 983
- Piles**
Axial Strength of Grouted Pile-to-Sleeve Connections, 526
- Dynamic Behavior of Pile Groups in Inhomogeneous Soil, 309
- Effects of Predrilling and Layered Soils on Piles, 235
- Horizontal Response of Piles in Layered Soils, 5
- Loading Rate Method for Pile Response in Clay, 252
- Torsional Response of Piles in Nonhomogeneous Soil, 285
- Piles**

- Pine trees**
Evapotranspiration of Small Conifers, 441
- Pipe design**
Design Flexibility Cuts Costs, 838
- Pipe diameter**
Economics of Pumping and the Utilization Factor, 404
Nomogram for Velocities of Partial Flows in Sewers, 62
Self-Cleansing Slope for Partially Full Sewers, 108
- Pipe flow**
Automatic Throttle Hose—New Flow Regulator, 434
Boundary Shear in Smooth Rectangular Ducts, 317
Cleaning and Lining Versus Parallel Mains, 728
Laminar Flow in Conduits of Unconventional Shape, 171
Nomogram for Velocities of Partial Flows in Sewers, 62
- Pipe jacking**
Pipe Jacking Method for Long Curve Construction, 28
- Pipe lining**
Testing of Cement-Mortar Lined Carbon Steel Pipes, 669
- Pipeline design**
Advances in Underground Pipeline Engineering, 956
Design Flexibility Cuts Costs, 838
Economics of Pumping and the Utilization Factor, 404
San Francisco Outfall: The Champ?, 952
- Pipelines**
Advances in Underground Pipeline Engineering, 956
Model for Beam-Mode Buckling of Buried Pipelines, 140
Pipe Laying Comes Out of the Trenches, 949
Solutions in the Pipeline, 919
Trench Effects on Blast-Induced Pipeline Stresses, 299
Wave-Induced Forces on Buried Pipeline, 792
- Pipes**
Leaching of Tetrachloroethylene from Vinyl-Lined Pipe, 49
- Planning**
Considering the Future in Public Works Planning, 109
Managing the Transition to CADD, 457
Mathematical Programming for Highway Project Analysis, 680
Quality in the Constructed Project, 1002
Rebuilding America: Infrastructure Rehabilitation, 1003
Specialization as a Strategy for Growth, 464
- Plastic analysis**
Inelastic Cyclic Analysis of Imperfect Columns, 546
Interaction of Plastic Local and Lateral Buckling, 607
Rigid-Plastic Analysis of Floating Plates, 174

- Unified Plastic Analysis for Infilled Frames, 558
- Plastic deformation**
Formulation of Drucker-Prager Cap Model, 176
Plastic Response of Cantilevers with Stable Cracks, 175
- Plastic pipes**
Advances in Underground Pipeline Engineering, 956
- Plastic properties**
Biaxial Stress-Strain Relations for Brick Masonry, 539
Design of Slender Webs Having Rectangular Holes, 519
Polyaxial Yielding of Granular Rock, 189
Ultimate Load Behavior of Beams with Initial Imperfections, 550
- Plasticity**
Bounding Surface Plasticity Model for Concrete, 147
New Constitutive Law for Equal Leg Fillet Welds, 580
Plasticity and Constitutive Relations in Soil Mechanics, 265
Third-Variant Plasticity Theory for Low-Strength Concrete, 158
- Plastics**
Reshaping the Future of Plastic Buildings, 867
- Plate girders**
Collapse of Plate Girders with Inclined Stiffeners, 494
- Plates**
Analysis of Plates on a Kerr Foundation Model, 210
Effects of Shear and Normal Strain on Plate Bending, 195
Nonlinear Analysis of Clamped Circular Plates, 622
Nonlinear Analysis of Plates with Plastic Orthotropy, 609
Plate Deflections Using Orthogonal Polynomials, 208
Test of Post-Tensioned Flat Plate with Banded Tendon, 589
Vibrating Nonuniform Plates on Elastic Foundation, 199
- Plates, structural**
Buckling Analysis of FRP-Faced Anisotropic Cylindrical Sandwich Panel, 157
Curved Bridge Decks: Analytical Strip Solution, 564
Design of Slender Webs Having Rectangular Holes, 519
Dynamic Lateral-Load Tests of R/C Column-Slabs, 514
Effect of Support Conditions on Plate Strengths, 480
Inelastic Buckling of Steel Plates, 475
Large Deflected Plates and Shells with Loading History, 164
Nonlinear Static and Dynamic Analysis of Plates, 136
- Plumes**

SUBJECT INDEX

- Errors from Using Conservation of Buoyancy Concept in Plume Computations, 377
- Field Comparison of Three Mass Transport Models, 315
- Pneumatic systems**
- Cherepnov Water Lifter: Theory and Experiment, 374
- Raise Boring in Civil and Mining Applications, 18
- Poles, supports**
- Behavior of Columns with Pretensioned Stays, 531
- Policies**
- Coastal Zone '85, 961
- Research Needs for Infrastructure Management, 723
- Political factors**
- Ethics of Professionalism, 125
- Pollutants**
- Spatial Estimation of Hazardous Waste Site Data, 98
- Pollution abatement**
- Deterministic Linear Programming Model for Acid Rain Abatement, 56
- Polyelectrolytes**
- Conditioning of Anaerobically Digested Sludge, 82
- Polyethylene**
- Catalytic Modification of Road Asphalt by Polyethylene, 671
- Polymers**
- Conditioning of Anaerobically Digested Sludge, 82
- Developments in New and Existing Materials, 973
- A Method for Finding Engineering Properties of Sealants, 177
- Polynomials**
- Plate Deflections Using Orthogonal Polynomials, 208
- Polyurethane**
- Foam Grout Saves Tunnel, 924
- Pontoon bridges**
- Floating Bridge for 100 Year Storm, 883
- Pore pressure**
- Hydraulic Fill Dam Made Earthquake Resistant, 881
- Liquefaction Potential Mapping for San Francisco, 237
- Seismic Stability of Gentle Infinite Slopes, 270
- Pore size distribution**
- Moisture Curve of Compacted Clay: Mercury Intrusion Method, 296
- Pore water**
- Latent Heat of Frozen Saline Coarse-Grained Soil, 266
- Pore water pressure**
- Comparison of Natural and Remolded Plastic Clay, 280
- Settlement Analysis of Embankments on Soft Clays, 259
- Wave-Induced Pressure under Gravity Structure, 765
- Pretensioning**
- Porosity
- New Method for Evaluating Liquefaction Potential, 239
- Porous media**
- Dispersion in Anisotropic, Homogeneous, Porous Media, 365
- Miscible Displacement in Porous Media: MOC Solution, 416
- Porous media flow**
- Lagrangean Continuum Theory for Saturated Porous Media, 205
- Simulation of Two-Fluid Response in Vicinity of Recovery Wells, 390
- Portland cements**
- New Pavement from Old Concrete, 872
- Portland Cement Concrete Thin-Bonded Overlay, 38
- Ports**
- Congestion Cost and Pricing of Seaports, 782
- Postbuckling behavior**
- Analytical Theory for Buried Tube Postbuckling, 181
- Inelastic Post-Buckling Behavior of Tubular Members, 593
- Post-Buckling Equilibrium of Hyperstatic Lattices, 143
- Snap-Through and Bifurcation in a Simple Structure, 179
- Sparingly Connected Built-Up Columns, 509
- Post-tensioning**
- Test of Post-Tensioned Flat Plate with Banded Tendon, 589
- Potable water**
- Expression for Drinking Water Supply Standards, 68
- Power plants**
- Water Quality Issues at Fossil Fuel Plants, 1024
- Wind Load Effects on Flat Plate Solar Collectors, 491
- Multi-Objective Analysis with Subjective Information, 752
- Pressure distribution**
- Dynamics of Internal Waves in Cylindrical Tank, 788
- Wave-Induced Forces on Buried Pipeline, 792
- Pressure gages**
- Correction of Head Loss Measurements in Water Mains, 672
- Pressures**
- Symmetric Buckling of Hinged Ring Under External Pressure, 215
- Prestressing**
- Behavior of Columns with Pretensioned Stays, 531
- Static and Fatigue Tests on Partially Prestressed Beams, 570
- Pretensioning**
- Behavior of Columns with Pretensioned Stays, 531
- Design of Diagonal Roof Bracing Rods and Tubes, 538
- Minimum Weight Sizing of Guyed Antenna

- Towers, 603
- Pricing**
 - Congestion Cost and Pricing of Seaports, 782
 - Fair and Reasonable Markup (FaRM) Pricing Model, 44
- Priorities**
 - Multi-Attribute Utility in Pavement Rehabilitation Decisions, 701
- Prisms**
 - Effects of Vortex-Resonance on Nearby Galloping Instability, 160
 - Flexural Strength of Masonry Prisms versus Wall Panels, 597
- Prisons**
 - Opportunity Knocks from Behind Bars, 879
- Probabilistic methods**
 - Stochastic Evaluation of Seismic Structural Performance, 545
 - Uncertainty of One-Dimensional Consolidation Analysis, 312
- Probabilistic models**
 - Estimating Elastic Constants and Strength of Discontinuous Rock, 279
 - Models for Human Error in Structural Reliability, 554
- Time Series Models for Treatment of Surface Waters, 51
- Probability**
 - Multivariate Distributions of Directional Wind Speeds, 529
- Probability distribution functions**
 - Suspended Sediment—River Flow Analysis, 99
- Probability theory**
 - Gravimetric Statistics of Riprap Quarries, 797
 - Limit States Criteria for Masonry Construction, 476
 - Nonlinear Response to Sustained Load Processes, 478
 - Non-Normal Responses and Fatigue Damage, 206
 - Reliability of Systems under Renewal Pulse Loading, 198
 - Stage Frequency Analysis at a Major River Junction, 351
- Production planning**
 - Production Estimating for Draglines, 24
- Productivity**
 - Climatic Effects on Construction, 27
 - Construction Productivity Improvement, 17
 - Evaluation of Craftsman Questionnaire, 48
 - Impacts of Constructability Improvement, 46
 - Managing Productivity During an Attrition Program, 451
 - Managing Public Works: How the Best Do It, 833
 - Motivating and Managing Engineers, 112
 - On Site Performance Improvement Programs, 23
 - Productivity Analysis of Construction Operations, 19
 - Productivity of Construction Professionals, 449
 - Total Quality Management for Construction, 26
- Professional development**
- Changing Jobs Successfully, 835
- Critical Human Technology Issues for Engineers, 466
- Development of an Engineering Manager, 450
- Entering Technical Management, 461
- Ethics in the Field, 954
- Harmonizing Organizational and Personal Needs, 467
- A Performance Review System, 453
- Professional practice**
 - Coping with Litigation, 882
 - Establishing a Professional Practice, 463
 - Ethics of Professionalism, 125
 - Professional Liability of the Architect and Engineer, 115
 - Professional Registration of Government Engineers, 117
- Professional registration**
 - Professional Registration of Government Engineers, 117
- Professional role**
 - Reducing Failures of Engineered Facilities, 1004
 - The Role of the Resident Engineer, 1009
- Professional services**
 - Establishing a Professional Practice, 463
- Progressive failure**
 - Microplane Model for Progressive Fracture of Concrete and Rock, 159
- Reinforced Concrete Pipe Columns: Behavior and Design, 10
- Project control**
 - Configuration Management as Applied to Engineering Projects, 462
 - Construction Research Applied to Practice, 968
 - Earned Value Technique for Performance Measurements, 454
 - Effective Management of Engineering Design, 452
 - Expert Systems for Construction Project Monitoring, 39
 - Making Project Control Systems Work, 992
 - Portables Pay Off, 932
 - Project Management on a Micro, 931
 - Second-Guessing the Engineer, 939
 - Steel Construction Evaluation by MLR-Strategies, 29
- Project evaluation**
 - Mathematical Programming for Highway Project Analysis, 680
 - A Uniform Technique for Flood Frequency Analysis, 747
- Project feasibility**
 - MDS Project—Main Dimensions and Economics, 232
- Project management**
 - Configuration Management as Applied to Engineering Projects, 462
 - Construction Productivity Improvement, 17
 - Earned Value Technique for Performance Measurements, 454
 - Effective Management of Engineering Design, 452

SUBJECT INDEX

- Elements of Cost and Schedule Management, 460
How Do Engineers Learn to Manage?, 846
Making Project Control Systems Work, 992
Managing Computers, 993
Organization and Management of Public Transport Projects, 1000
Project Management on a Micro, 931
The Role of the Resident Engineer, 1009
Saving the Lady, 832
Project planning
Construction Productivity Improvement, 17
Effective Management of Engineering Design, 452
Organization and Management of Public Transport Projects, 1000
Waste Cleanup: Lessons Learned, 877
Project selection
Mathematical Programming for Highway Project Analysis, 680
Protocols
KERMIT Protocol for Inter-Computer Data Transfer, 655
Prototypes
Floating Breakwater Design, 778
Hydraulic Conductivity of Two Prototype Clay Liners, 286
Pseudodynamic method
Pseudodynamic Method for Seismic Performance Testing, 562
Public participation
Coastal Zone '85, 961
Public safety
Stormwater Detention Outlet Control Structures, 1015
Public transportation
Organization and Management of Public Transport Projects, 1000
Public welfare
One Plus One Makes Thirty, 118
Public works
Considering the Future in Public Works Planning, 109
Data Base in Your City's Future?, 935
Managing Public Works: How the Best Do It, 833
Private Funds, Public Projects, 920
Private versus Public Ownership of Constructed Facilities, 458
Tampa Does It with Mirrors, 947
User-Pay Funding and Creative Capital Financing, 113
Publications
Skyscraper (review), 854
A Uniform Technique for Flood Frequency Analysis, 747
Pull-out resistance
Evaluation of Design Methods for Vertical Anchor Plates, 262
Pumped storage
Bath County Pumped Storage, 896
Helms Pumped Storage Project, 890
Pumping
Economics of Pumping and the Utilization Factor, 404
Pumped Wastewater Collection Systems Optimization, 87
Saltwater Uptake in Unconfined Aquifers, 342
Pumping plants
Optimal Operation of California Aqueduct, 740
Pumping stations
Capacity Expansion of Sao Paulo Water Supply, 741
Quadratic programming
Optimization Model for Aggregate Blending, 34
Qualifications
Professional Registration of Government Engineers, 117
Quality assurance
Construction QA/QC Systems that Work: Case Studies, 967
The Pursuit of Quality: QA/QC, 848
Quality in the Constructed Project, 1002
The Role of the Resident Engineer, 1009
Quality control
Challenges to Civil Engineering Educators and Practitioners—Where Should We Be Going?, 959
Construction QA/QC Systems that Work: Case Studies, 967
The Pursuit of Quality: QA/QC, 848
Quality Control: A Neglected Factor, 843
Quality in the Constructed Project, 1002
Reducing Failures of Engineered Facilities, 1004
Statistical Analysis of Specification Compliance, 690
Total Quality Management for Construction, 26
Quarter point element
Stress Intensity Factor Using Quarter Point Element, 138
Radar
Terrain Profiling Using Seasat Radar Altimeter, 661
Radial flow
Radial Turbulent Flow Between Parallel Plates, 359
Radioactive wastes
Thermo-Mechanical Behavior of Seafloor Sediments, 302
Water Division at Low-Level Waste Disposal Sites, 95
Radioactive water disposal
Transition in the Nuclear Industry, 1020
Radon
Removal of Radon from Water Supplies, 83
Rail transportation
High-Speed Rail Systems in the United States, 673
Rail Planning—Texas Style, 940
A Tale of Two Cities: Light Rail Transit in Canada, 715
The Tunnel That Transformed Philadelphia, 886
Railroad engineering

Rail transportation

- Railway Route Rationalization: A Valuation Model, 675
Railroad stations
Romanesque Reused, 918
Railroad tracks
Impact in Truss Bridge Due to Freight Trains, 135
Rainfall intensity
Overland Flow Hydrographs for SCS Type II Rainfall, 436
Rainfall-runoff relationships
Drainage Coefficients for Heavy Land, 421
Modeling of Rainfall Erosion, 400
Prediction of Combined Snowmelt and Rainfall Runoff, 327
Runoff Probability, Storm Depth, and Curve Numbers, 440
Spatially Varying Rainfall and Floodrisk Analysis, 362
Raise boring machine
Raise Boring in Civil and Mining Applications, 18
Random processes
ARMA Representation of Random Processes, 152
Non-Normal Responses and Fatigue Damage, 206
Random Creep and Shrinkage in Structures: Sampling, 541
Random vibration
Active Control of Seismic-Excited Buildings, 606
Energy Fluctuation Scale and Diffusion Models, 133
Hysteretic Dampers in Base Isolation: Random Approach, 515
On the Reliability of a Simple Hysteretic System, 221
Optimum Characteristics of Isolated Structures, 642
Random Vibration of Degrading, Pinching Systems, 186
Stochastic Evaluation of Seismic Structural Performance, 545
Wind-Induced Response Analysis of Tension Leg Platforms, 472
Random waves
Force Spectrum of Horizontal Member, 209
Interaction of Random Waves and Currents, 776
Rapid transit railways
Dynamics of Steel Elevated Guideways—An Overview, 588
High-Speed Rail Systems in the United States, 673
Rates
Impact of Conservation on Rates and Operating Costs, 738
Recirculation
Circulation Structure in a Stratified Cavity Flow, 337
Two-Equation Turbulence Model for Flow in Trenches, 6
Reconstruction
Rehabilitation, Renovation, and Reconstruction of Buildings, 1005
Recreational facilities

- Estimating Recreational Travel and Economic Values of State Parks, 724
The Hybrid Arena, 849
Rectangular hollow sections
Imperfect Columns with Biaxial Partial Restraints, 518
Redundancy
Sensitivity of Reliability-Based Optimum Design, 577
State-of-the-Art Report on Redundant Bridge Systems, 629
Refuse derived fuel
Bound Glass in Shredded Municipal Solid Waste, 233
Regional development
A Tale of Six Cities, 866
Transportation Requirements for High Technology Industrial Development, 703
Regional planning
Irrigation System Study in International Basin, 734
Regression models
Determination of Urban Flood Damages, 743
Regulated flow
Automatic Throttle Hose—New Flow Regulator, 434
Regulation
Dredging and Dredged Material Disposal, 975
Regulations
Exporting Colorado Water in Coal Slurry Pipelines, 739
Seismic Experience Data—Nuclear and Other Plants, 1012
Rehabilitation
Cleaning and Lining Versus Parallel Mains, 728
Least-Cost Planning of Irrigation Systems, 442
Multi-Attribute Utility in Pavement Rehabilitation Decisions, 701
New Cables for Old, 925
Rebuilding America: Infrastructure Rehabilitation, 1003
Rehabilitation, Renovation, and Reconstruction of Buildings, 1005
Restoring the Capitol's West Front, 917
Solutions in the Pipeline, 919
Reinforcement
Dynamic Lateral-Load Tests of R/C Column-Slabs, 514
Empirical Study of Bar Development Behavior, 482
Restoring the Capitol's West Front, 917
Reinforcing steel
Empirical Study of Bar Development Behavior, 482
Reinforcing steels
Biggest Highway Rebuild, 889
Clearing the Decks, 922
New Finite Element for Bond-Slip Analysis, 565
Relaxation, mechanics
Real and Apparent Relaxation of Driven Piles, 248
Reliability

SUBJECT INDEX

Responsibility

- Energy Fluctuation Scale and Diffusion Models, 133
Offshore Platform Fatigue Cracking Probability, 573
Reliability analysis
Nonlinear Response to Sustained Load Processes, 478
Wood Floor Behavior: Experimental Study, 628
Remote sensing
Irrigation Scheduling Using Crop Indicators, 423
Renovation
Opportunity Knocks from Behind Bars, 879
Rehabilitation, Renovation, and Reconstruction of Buildings, 1005
Romanesque Reused, 918
Repairing
New Safety for Old Dams, 923
Repair Technique for Buckled Wood Truss Members, 530
A Road to Recovery, 876
Research
Collapse of Thick Wall Pipe in Ultra Deep Water, 704
Construction Research Applied to Practice, 968
Current Research and Research Needs in Deep Foundations, 969
Demoresearch for Resource and Energy Recovery, 111
Structural Safety Studies, 1018
Use of Computerized Databases in Legal Research, 650
Research needs
Current Research and Research Needs in Deep Foundations, 969
Rehabilitation, Renovation, and Reconstruction of Buildings, 1005
Research Agenda for Floods to Solve Policy Failure, 729
Research Needs for Infrastructure Management, 723
Research Needs Related to the Nation's Infrastructure, 1006
Stormwater Detention Outlet Control Structures, 1015
Reservoir operation
Ground-Water Reservoir Operation for Drought Management, 746
Modeling the California State Water Project, 731
Problems with Modeling Real-Time Reservoir Operations, 750
Reservoir performance
Reservoir Bottom Absorption Effects in Earthquake Response of Concrete Gravity Dams, 505
Reservoir storage
Flood Storage in Reservoirs, 418
Reservoirs
Capacity Expansion of Sao Paulo Water Supply, 741
Computer Applications in Water Resources, 963
Design Flexibility Cuts Costs, 838
Dissolved Oxygen Model for a Dynamic Reservoir, 91
Finite Element Modeling of Infinite Reservoirs, 218
Mixed-Layer Deepening in Lakes after Wind Setup, 396
Optimal Operation of California Aqueduct, 740
Reservoir Modeling to Develop AWT Nitrate Standard, 12
Residence time
Residence Time in Stormwater Detention Basins, 55
Resident engineers
The Role of the Resident Engineer, 1009
Residential streets
Speed (Road) Bumps: Issues and Opinions, 699
Residual soils
Geotechnical Characteristics of Residual Soils, 238
Residual stress
Design Criteria for Box Columns Under Biaxial Loading, 637
Local Buckling of W Shape Columns and Beams, 8
Plate Instability for W Shapes, 7
Resins
Adsorption of Organic Vapors on Carbon and Resin, 81
Strength of Resin Mortar Tunnel, 225
Resonance
Effects of Vortex-Resonance on Nearby Galloping Instability, 160
Loads Due to Spectator Movements, 496
Resonance tests
Richart Commemorative Lectures, 1007
Vibrational Characteristics of Multi-Cellular Structures, 559
Resource allocation
Methods Used to Evaluate Highway Improvements, 2
Resource conservation
Hammering Out a New RCRA, 863
Resource recovery
Demoresearch for Resource and Energy Recovery, 111
Hammering Out a New RCRA, 863
Separation of Solid Waste With Pulsed Airflow, 102
Response spectra
Floor Spectra for Nonclassically Damped Structures, 625
Seismic Floor Spectra by Mode Acceleration Approach, 214
Seismic Response of Light Subsystems on Inelastic Structures, 495
Simplified Earthquake Analysis of Multistory Structures With Foundation Uplift, 641
Transmitting Boundaries and Seismic Response, 244
Responsibility
One Plus One Makes Thirty, 118
Restoration

Restoration

- Saving the Lady, 832
Restraint systems
Stability of Continuously Restrained Cantilevers, 217
Retaining walls
Active Earth Pressure Behind Retaining Walls, 257
The Arch in Soil Arching, 251
Dynamic Soil and Water Pressures of Submerged Soils, 297
Retirement
Selecting the Correct Retirement Plan for Your Business, 455
Retrofitting
CPM Harnesses Mammoth Powerplant Job, 836
Mini Hydro at Low Cost, 893
Transition in the Nuclear Industry, 1020
Return flow
Report of Task Committee on Water Quality Problems Resulting from Increasing Irrigation Efficiency, 428
Revegetation
Revegetation Using Coal Ash Mixtures, 85
Reversing flow
Surface Buoyant Jets in Steady and Reversing Crossflows, 364
Revetments
Gravimetric Statistics of Riprap Quarystones, 797
Riprap Stability Under Wave Action, 795
Stability of Armor Units on Composite Slopes, 817
Right of way, land
Transmission Corridor Location Modeling, 676
Rigid frames
Maximum Strength Design of Structural Frames, 549
Reliability of Ductile Systems with Random Strengths, 551
Rigid pavements
Comparison of Two Rigid Pavement Design Methods, 713
Developments in New and Existing Materials, 973
Rings
Symmetric Buckling of Hinged Ring Under External Pressure, 215
Riparian land
Instream Flow Protection in Riparian States, 735
Riprap
Drag of Oscillatory Waves on Spheres in a Permeable Bottom, 761
Gravimetric Statistics of Riprap Quarystones, 797
Incipient Sediment Motion and Riprap Design, 348
Riprap Stability Under Wave Action, 795
Stability of Armor Units on Composite Slopes, 817
Risk analysis
Erosion Risk Analysis for a Southwestern Arroyo, 720
Risk Analysis for Seismic Design of Tailings Dams, 283
River basin development

1985 ASCE TRANSACTIONS

- Agricultural Benefits for Senegal River Basin, 422
River basins
Basin-Wide Impacts of Irrigation Efficiency, 433
Large Basin Deterministic Hydrology: A Case Study, 393
River beds
Prediction of 2-D Bed Topography in Rivers, 391
River flow
River Flow Forecasting Model for the Sturgeon River, 336
Rivers
Computer Applications in Water Resources, 963
Estimating Mean Velocity in Mountain Rivers, 354
Modification of River's Tide by Its Discharge, 775
Oil Slicks in Ice Covered Rivers, 339
Overbank Flow with Vegetatively Roughened Flood Plains, 395
River Flood Routing by Nonlinear Muskingum Method, 409
River Morphology and Thresholds, 347
Scour at Cylindrical Bridge Piers in Armored Beds, 360
Stage Frequency Analysis at a Major River Junction, 351
Suspended Sediment—River Flow Analysis, 99
Road design
Consistency in Design for Low-Volume Rural Roads, 705
Robotics
Automation and Robotics for Construction, 32
Robotics in Building Construction, 37
Rock excavation
State of the Art: Rock Tunneling—*bTunnelling in Soil and Rock*, K.Y. Lo, ed., 1984, 14
Rock joints
Cyclic Testing and Modeling of Interfaces, 276
Rock masses
Estimating Elastic Constants and Strength of Discontinuous Rock, 279
Rock Masses: Modeling of Underground Openings/Probability of Slope Failure/Fracture of Intact Rock, 1008
Rock mechanics
Rock Masses: Modeling of Underground Openings/Probability of Slope Failure/Fracture of Intact Rock, 1008
State of the Art: Rock Tunneling—*bTunnelling in Soil and Rock*, K.Y. Lo, ed., 1984, 14
Strength of Intact Geomechanical Materials, 273
Rock strength
Comparison of Two Strength Criteria for Intact Rock, 314
Estimating Elastic Constants and Strength of Discontinuous Rock, 279
Rocks
Microplane Model for Progressive Fracture of Concrete and Rock, 159
Polyaxial Yielding of Granular Rock, 189
Rods

SUBJECT INDEX

Sand

- Design of Diagonal Roof Bracing Rods and Tubes, 538
Restoring the Capitol's West Front, 917
Roll compacting
New Ways with Concrete, 868
Roller Compacted Concrete, 1010
Roller compacted concrete
Dam Pioneers Concrete Variant, 887
Roller Compacted Concrete, 1010
Roof failures
Indicator of Residential Roof Strength in Wind, 599
Timoshenko Beams with Rotational End Constraints, 150
Wind-Induced Fatigue on Low Metal Buildings, 522
Roofs
Drift Snow Loads on Multilevel Roofs, 488
Lateral Stability of Beams with Elastic End Restraints, 155
Repair Technique for Buckled Wood Truss Members, 530
Theory for Thermally Induced Roof Noise, 615
Timoshenko Beams with Rotational End Constraints, 150
Ropeways
Modern Material Ropeway Capabilities and Characteristics, 716
Rotation
Conjugate Frame for Shear and Flexure, 508
Experimental Foundation Impedance Functions, 277
Route preferences
Estimating Recreational Travel and Economic Values of State Parks, 724
Generating a Bus Route O-D Matrix From On-Off Data, 712
Routing
Problems with Modeling Real-Time Reservoir Operations, 750
Rubble-mound breakwaters
Damage to Armor Units: Model Technique, 813
Rubble Mounds: Hydraulic Conductivity Equation, 811
Rubble Mounds: Numerical Modeling of Wave Motion, 812
Scaling the Weight of Breakwater Armor Units, 798
Runoff
Proportional Weirs for Stormwater Pond Outlets, 853
Reuse System Design for Border Irrigation, 426
Runoff forecasting
Prediction of Combined Snowmelt and Rainfall Runoff, 327
Rural areas
Estimating Rural and Urban Infrastructure Needs, 114
Rural roads
Consistency in Design for Low-Volume Rural Roads, 705
Safety
Blind Drilling Down Under, 913
Decisions in Construction Operations, 42
Safety factors
Determination of Critical Slope Failure Surfaces, 249
Sparsely Connected Built-Up Columns, 509
Salaries
1984 Civil Engineering Educators Salary Survey, 122
Saline water
Latent Heat of Frozen Saline Coarse-Grained Soil, 266
Saltwater Upconing in Unconfined Aquifers, 342
Saline water intrusion
Lower Mississippi Salinity Analysis, 335
Saline water-freshwater interfaces
Transition Zone Width in Ground Water on Ocean Atolls, 357
Salinity
Chemical Reactions within Root Zone of Arid Zone Soils, 430
Drainage Required to Manage Salinity, 429
Report of Task Committee on Water Quality Problems Resulting from Increasing Irrigation Efficiency, 428
Salt Problems from Increased Irrigation Efficiency, 431
Two Projects Became One, 912
Salt water intrusion
Dominant Shear Stresses in Arrested Saline Wedges, 807
Locks with Devices to Reduce Salt Intrusion, 826
Seawater Circulation in Sewage Outfall Tunnels, 367
San Francisco
Liquefaction Potential Mapping for San Francisco, 237
Sand
Bed Load or Suspended Load, 321
Confining Pressure, Grain Angularity, and Liquefaction, 301
Dynamic Centrifugal Modeling of a Horizontal Dry Sand Layer, 250
Effect of Initial Shear on Cyclic Behavior of Sand, 311
Endochronic Modeling of Sand in True Triaxial Test, 204
Entrained and Bed-Load Sand Concentrations in Waves, 796
Equilibrium Boundary Condition for Suspension, 322
Evaluation of Design Methods for Vertical Anchor Plates, 262
The Influence of SPT Procedures in Soil Liquefaction Resistance Evaluations, 313
Lateral Stresses Observed in Two Simple Shear Apparatus, 271
Liquefaction Potential of Sands Using the CPT, 256
New Method for Evaluating Liquefaction Potential, 239

- Streambank Stability, 267
Sandwich panels
Buckling Analysis of FRP-Faced Anisotropic Cylindrical Sandwich Panel, 157
Sanitary sewers
Accounting for Every Pipe, 942
Satellite mapping
Terrain Profiling Using Seasat Radar Altimeter, 661
Saturation
Effect of Initial Shear on Cyclic Behavior of Sand, 311
Saudi Arabia
Residential Real Estate Development in Saudi Arabia, 721
Scaffolds
Saving the Lady, 832
Scale effect
The Engineering Aesthetics of Tall Buildings, 978
Scattering
Attenuation Versus Transparency, 78
Scheduling
Construction Productivity Improvement, 17
CPM Harnesses Mammoth Powerplant Job, 836
Earned Value Technique for Performance Measurements, 454
Elements of Cost and Schedule Management, 460
Network Scheduling Variations for Repetitive Work, 25
Optimal Operation of California Aqueduct, 740
Project Management on a Micro, 931
A Simulation Model to Forecast Project Completion Time, 41
Steel Construction Evaluation by MLR-Strategies, 29
Vehicle Pooling in Transit Operations, 689
Scour
Channel Scouring Potential Using Logistic Analysis, 328
Channel Width Adjustment During Scour and Fill, 402
Culvert Slope Effects on Outlet Scour, 401
Effect of Pier Spacing on Scour Around Bridge Piers, 385
Free Jet Scour Below Dams and Flip Buckets, 330
Local Scour Downstream of an Apron, 403
Scour at Cylindrical Bridge Piers in Armored Beds, 360
Wave Load-Submarine Pipeline-Seafloor Interaction, 686
Scrubber sludge
Field Aging of Fixed Sulfur Dioxide Scrubber Waste, 231
Sea floor
Punch-Through Instability of Jack-Up on Seabed, 264
Thermo-Mechanical Behavior of Seafloor Sediments, 302
Sea level
Finite Element Modelling of Nonlinear Coastal Currents, 786
Sea Level Rise Effects on Shoreline Position, 824
Sea walls
Seawall Constraint in the Shoreline Numerical Model, 831
Sea water
Project Mixes Oil and Water, 895
Sealants
A Method for Finding Engineering Properties of Sealants, 177
Secondary systems
Dynamic Characterization of Two-Degree-of-Freedom Equipment-Structure Systems, 127
Dynamic Response of Multiply Supported Secondary Systems, 128
Nitritification in Water Hyacinth Treatment Systems, 94
Sediment
Estimation of Hydraulic Data by Spline Functions, 392
Incipient Sediment Motion and Riprap Design, 348
Metal Distribution and Contamination in Sediments, 58
Modeling of Unsteady Flows in Alluvial Streams, 332
Regime of Oscillatory Flow, 764
Sea Level Rise Effects on Shoreline Position, 824
Thermo-Mechanical Behavior of Seafloor Sediments, 302
Sediment concentration
Dredge-Induced Turbidity Plume Model, 790
Entrained and Bed-Load Sand Concentrations in Waves, 796
Fluid and Sediment Interaction over a Plane Bed, 371
Sediment load
Sediment Transport under Ice Cover, 373
Sediment transport
3-D Model of Bathymetric Response to Structures, 769
Bed Load or Suspended Load, 321
Compilation of Alluvial Channel Data, 387
Episodicity in Longshore Sediment Transport, 794
Fall Velocity of Particles in Oscillating Flow, 346
Field Data on Seaward Limit of Profile Change, 799
Hydrodynamically Smooth Flows Over Surface Material in Alluvial Channels, 407
Sediment Transport in Shallow Flows, 399
Sediment Transport under Ice Cover, 373
Threshold Effects on Sediment Transport by Waves, 783
Velocity Moments in Nearshore, 774
Water and Sediment Routing Through Curved Channels, 356
Sediment yield
Simulator for Water Resources in Rural Basins, 375
Sedimentation
Equilibrium Boundary Condition for Suspension, 322
Flow under Tilt Surface for High-Rate Settling, 67

SUBJECT INDEX

- Salt River Channelization Project: Model Study, 333
Specific Resistance Measurements: Methods and Procedures, 65
Specific Resistance Measurements: Nonparabolic Data, 64
Seepage
Characteristics of Free Surface Flow Over a Gravel Bed, 438
Drainage Due to Gravity under Nonlinear Law, 419
Engineering with Spreadsheets, 930
Filters for Silts and Clays, 9
Inflow Seepage Influence on Straight Alluvial Channels, 388
Model for Piping-Plugging in Earthen Structures, 278
Phosphogypsum Waste Anion Removal by Soil Minerals, 93
Seepage and Leakage from Dams and Impoundments, 1011
Wave-Induced Pressure under Gravity Structure, 765
Seepage control
Plastic Lining on Riverton Unit, Wyoming, 437
Seepage and Leakage from Dams and Impoundments, 1011
Seismic analysis
Liquefaction Resistance of Thickened Tailings, 310
Measurement and Use of Shear Wave Velocity for Evaluating Dynamic Soil Properties, 994
Seismic design
Design of a Seismic-Resistant Friction-Braced Frame, 643
Mechanistic Seismic Damage Model for Reinforced Concrete, 516
RC Structural Walls: Seismic Design for Shear, 582
Risk Analysis for Seismic Design of Tailings Dams, 283
Seismic Experience Data—Nuclear and Other Plants, 1012
Seismic Floor Spectra by Mode Acceleration Approach, 214
Seismic response
Design Spectra for Degrading Systems, 635
Dynamic Analysis of a Forty-Four Story Building, 567
Floor Spectra for Nonclassically Damped Structures, 625
Inelastic Response of Tubular Steel Offshore Towers, 611
Reservoir Bottom Absorption Effects in Earthquake Response of Concrete Gravity Dams, 505
Response Maxima of a SDOF System under Seismic Action, 598
Seismic Experience Data—Nuclear and Other Plants, 1012
Seismic Response of Light Subsystems on Inelastic Structures, 495
Seismic Response of Pile Supported Cooling Towers, 591
Seismic Response of RC Frames with Steels Braces, 604
Seismically Induced Fluid Forces on Elevated
Tanks, 664
Simplified Earthquake Analysis of Multistory Structures With Foundation Uplift, 641
Simplified Earthquake Analysis of Structures with Foundation Uplift, 527
Transmitting Boundaries and Seismic Response, 244
Seismic stability
Liquefaction Evaluation Procedure, 275
Seismic Stability of Gentle Infinite Slopes, 270
Seismic tests
Pseudodynamic Method for Seismic Performance Testing, 562
Richart Commemorative Lectures, 1007
Selection
Procedure to Select an Optimum Irrigation Method, 439
Sensitivity analysis
Ground-Water Reservoir Operation for Drought Management, 746
Kinematic Shock: Sensitivity Analysis, 353
Lagrangian Approach to Design Sensitivity Analysis, 166
Review of Nonlinear FE Methods with Substructures, 212
Sensitivity Analysis for Structural Errors, 579
Sensors
Rating Pavements by Computer, 933
Separation techniques
Separation of Solid Waste With Pulsed Airflow, 102
Service life
Can We Save the Ogallala?, 906
Service loads
Advances in Short Span Steel Bridges, 938
Serviceability
Lateral-Torsional Motion of Tall Buildings, 627
Services
Urban Transit: Equity Aspects, 719
Settlement analysis
Performance of a Stone Column Foundation, 247
Settlement Analysis of Skirted Granular Piles, 303
Thaw Settlement Analysis for Buried Pipelines in Permafrost**Pipelines in Adverse Environments II**, Mark Pickell, ed., 1983, I
Settlers, separators
Flow under Tilt Surface for High-Rate Settling, 67
Settling velocity
Bed Material Movement in Hyperconcentrated Flow, 376
Modified Approach to Evaluate Column Test Data, 63
Unified Analysis of Thickening, 50
Sewage disposal
Seawater Circulation in Sewage Outfall Tunnels, 367
Sewage-Related Wastes and Oceans: A Problem?, 126
Sewage treatment

- Biofilm Growths with Sucrose as Substrate, 71
 Dispersion Model for Waste Stabilization Ponds, 52
 Performance of Surface Rotors in an Oxidation Ditch, 54
 Reservoir Modeling to Develop AWT Nitrate Standard, 12
- Sewer pipes**
 Accounting for Every Pipe, 942
 Nomogram for Velocities of Partial Flows in Sewers, 62
 Self-Cleansing Slope for Partially Full Sewers, 108
- Shafts, excavations**
 Raise Boring in Civil and Mining Applications, 18
- Shake table tests**
 Lateral Load Response of Flat-Plate Frame, 605
- Shale**
 Estimating Elastic Constants and Strength of Discontinuous Rock, 279
- Expanded Shale Lightweight Fill: Geotechnical Properties, 290
- Rate of Shear Effects on Vane Shear Strength, 241
- Shallow foundations**
 Beam on Generalized Two-Parameter Foundation, 165
 Bearing Capacity of Gravity Bases on Layered Soil, 272
 Dimensioning Footings Subjected to Eccentric Loads, 269
 Effect of Underground Void on Foundation Stability, 289
- Shallow water**
 Comparison of Two River Diffuser Models, 382
 Depth-Controlled Wave Height, 789
 Sediment Transport in Shallow Flows, 399
 Shallow River Pushboat Preliminary Design, 804
 Significant Wave Height for Shallow Water Design, 814
 Wind Wave Growth in Shallow Water, 810
- Shape**
 Confining Pressure, Grain Angularity, and Liquefaction, 301
- Submerged Weirs, 326
- Shear**
 Conjugate Frame for Shear and Flexure, 508
 Fiber Reinforced Beams Under Moment and Shear, 503
 Probabilistic Basis for Design Criteria in Reinforced Concrete, 1001
- Shear deformation**
 Analytical Modeling of Tube-In-Tube Structure, 552
 Shear Lag Analysis and Effective Width of Curved Girder Bridges, 131
 Timoshenko Beams with Rotational End Constraints, 150
- Shear effects**
 Rate of Shear Effects on Vane Shear Strength, 241
- Shear failure**
 Impulsive Direct Shear Failure in RC Slabs, 574

- Shear forces**
 Multistory Frames Under Sequential Gravity Loads, 620
- Shear lag**
 Analytical Modeling of Tube-In-Tube Structure, 552
 Nonuniform Bending-Stress Distribution (Shear Lag), 639
 Shear Lag Analysis and Effective Width of Curved Girder Bridges, 131
- Shear modulus**
 Elastostatic Infinite Elements for Layered Half Spaces, 196
 Inverted Shear Modulus from Wave-Induced Soil Motion, 240
 Microcomputer Based Free Torsional Vibration Test, 287
 New Method for Evaluating Liquefaction Potential, 239
 Shear Modulus of Precracked R/C Panels, 487
 Transmitting Boundaries and Seismic Response, 244
- Shear rate**
 Rate of Shear Effects on Vane Shear Strength, 241
- Shear strain**
 Effects of Shear and Normal Strain on Plate Bending, 195
- Shear strength**
 Analysis of Two-Way Acting Composite Slabs, 470
 Continuous Timber Diaphragms, 533
 Design of Slender Webs Having Rectangular Holes, 519
 Design Strengths for an Offshore Clay, 253
 Direct Model Test of Stub Girder Floor System, 563
 Light-Frame Shear Wall Length and Opening Effects, 610
 RC Structural Walls: Seismic Design for Shear, 582
 Transmitting Boundaries and Seismic Response, 244
 Transverse Stirrup Spacing in R/C Beams, 492
 Unified Plastic Analysis for Infilled Frames, 558
- Shear stress**
 Bed Shear From Velocity Profiles: A New Approach, 324
 Boundary Shear in Smooth Rectangular Ducts, 317
 Dominant Shear Stresses in Arrested Saline Wedges, 807
 Structure of Turbulence in Compound Channel Flows, 394
- Shear tests**
 Design Strengths for an Offshore Clay, 253
 Transverse Stirrup Spacing in R/C Beams, 492
- Shear walls**
 Behavior of Wood-Framed Shear Walls, 578
 Light-Frame Shear Wall Length and Opening Effects, 610
 Racking Deformations in Wood Shear Walls, 486
 Structural Behavior of Wood Shear Wall Assemblies, 512

SUBJECT INDEX

Shear waves

Measurement and Use of Shear Wave Velocity for Evaluating Dynamic Soil Properties, 994

Sheet metal

Theory for Thermally Induced Roof Noise, 615

Shell structures

Buckling Analysis of FRP-Faced Anisotropic Cylindrical Sandwich Panel, 157

Buckling of Orthotropic Cylinders due to Wind Load, 161

Cold-Formed Steel Farm Structures Part II: Barrel Shells, 601

Large Deflected Plates and Shells with Loading History, 164

Seismic Response of Pile Supported Cooling Towers, 591

Shields, tunneling

Evaluation of Soil Response to EPB Shield Tunneling, 243

Ship motion

Nineteenth Coastal Engineering Conference: Proceedings of the International Conference, 997

Shore protection

Seawall Constraint in the Shoreline Numerical Model, 831

Shoreline changes

3-D Model of Bathymetric Response to Structures, 769

Beach Evolution Caused by Littoral Drift Barrier, 802

Field Data on Seaward Limit of Profile Change, 799

Sea Level Rise Effects on Shoreline Position, 824

Seawall Constraint in the Shoreline Numerical Model, 831

Shotcrete

Tunnel Shotcreting—Strength in Fibers, 953

Shrinkage

Random Creep and Shrinkage in Structures: Sampling, 541

Variability in Long-Term Concrete Deformations, 583

Sidesway

Effective Length of Luffing Jibs, 630

Silica

New Ways with Concrete, 868

Silos

Design and Analysis of Silos for Friction Forces, 555

Silo as a System of Self-Induced Vibration, 481

Silts

Filters for Silts and Clays, 9

Silty soils

Unearthing Mt. Baker Tunnel, 946

Simple shear tests

Effect of Initial Shear on Cyclic Behavior of Sand, 311

Lateral Stresses Observed in Two Simple Shear Apparatus, 271

Simulation

Slope stability

A Space Age Test Center, 888

Simulation models

Modeling the California State Water Project, 731

Productivity Analysis of Construction Operations, 19

Reservoir Modeling to Develop AWT Nitrate Standard, 12

Simulating Cost and Quality in Water Distribution, 755

A Simulation Model to Forecast Project Completion Time, 41

Simulator for Water Resources in Rural Basins, 375

SIREN: A Repetitive Construction Simulation Model, 40

Spatially Varying Rainfall and Floodrisk Analysis, 362

Watershed Management in the Eighties, 1025

Sinkholes

Predicting Sinkhole Collapse, 943

Site evaluation

Portables Pay Off, 932

Site preparation, construction

Foundation Densification for Fossil Plant Loads, 226

Size

Gravimetric Statistics of Riprap Quarystones, 797

Strength of Resin Mortar Tunnel, 225

Skewed structures

The Hybrid Arena, 849

Skewness

Finite Water Depth Effects on Nonlinear Waves, 785

Skid resistance

Overview of Skid Resistance on Ohio Pavements, 709

Slabs

Analysis of Two-Way Acting Composite Slabs, 470

Collapse of Square PSC Slabs with Corner Restraint, 489

Comparison of Two Rigid Pavement Design Methods, 713

Curved Bridge Decks: Analytical Strip Solution, 564

On the Computation of Slab Effective Widths, 493

Shear Capacity of Stub-Girders: Full Scale Tests, 473

Standard: Specifications for the Design and Construction of Composite Slabs and Commentary on Specifications for the Design and Construction of Composite Slabs, 1014

Slip

New Finite Element for Bond-Slip Analysis, 565

Slope stability

Determination of Critical Slope Failure Surfaces, 249

Rock Masses: Modeling of Underground Openings/Probability of Slope Failure/Fracture of Intact Rock, 1008

Seismic Stability of Gentle Infinite Slopes, 270

Slope Reliability and Response Surface Method,

Slope stability

- 236
- Solution of Base Stability Analysis in Layered Soils, 291
- Stability of Membrane Reinforced Slopes, 304
- Streambank Stability, 267

Sloshes

- Culvert Slope Effects on Outlet Scour, 401
- Interference Between Geotechnical Structures, 258
- Self-Cleansing Slope for Partially Full Sewers, 108

Sloshing

- Dynamics of Internal Waves in Cylindrical Tank, 788

Sludge disposal

- Is There Grit in Your Sludge?, 864
- Multi-Objective Decision-Making in Waste Disposal Planning, 73

Sludge treatment

- Auto-Oxidation Effect on Flue Gas Sludge Systems, 227
- Conditioning of Anaerobically Digested Sludge, 82
- Specific Resistance Measurements: Methods and Procedures, 65
- Specific Resistance Measurements: Nonparabolic Data, 64

Slurries

- Issues in Dam Grouting, 991
- Specific Resistance Measurements: Methods and Procedures, 65
- Specific Resistance Measurements: Nonparabolic Data, 64

Slurry pipelines

- Exporting Colorado Water in Coal Slurry Pipelines, 739

Snow loads

- Drift Snow Loads on Multilevel Roofs, 488

Snowdrifts

- Drift Snow Loads on Multilevel Roofs, 488

Snowmelt

- Prediction of Combined Snowmelt and Rainfall Runoff, 327
- River Flow Forecasting Model for the Sturgeon River, 336

Social values

- Ethics of Professionalism, 125

Socioeconomic data

- Research Agenda for Floods to Solve Policy Failure, 729

Soft soils

- Flow Field Around Cones in Steady Penetration, 246
- Gravity Effects in Consolidation of Layer of Soft Soil, 188
- Settlement Analysis of Embankments on Soft Clays, 259

Softening

- Elastic-Plastic-Softening Analysis of Plane Frames, 525
- Stiffness Matrix for Elastic-Softening Beams, 499
- Soil classification

1985 ASCE TRANSACTIONS

Geotechnical Characteristics of Residual Soils, 238

Soil compaction

- Soil Security Test for Water Retaining Structures, 500

Soil compressibility

- Compressibility of Partly Saturated Soils, 284

Soil dispersion

- Soil Security Test for Water Retaining Structures, 500

Soil dynamics

- Dynamic Centrifugal Modeling of a Horizontal Dry Sand Layer, 250

Nonlinear Hysteretic Dynamic Response of Soil Systems, 167

Richart Commemorative Lectures, 1007

Soil erosion

- Modeling of Rainfall Erosion, 400

Soil, layered

- Effects of Predrilling and Layered Soils on Piles, 235

Horizontal Response of Piles in Layered Soils, 5

Soil layers

- Dynamic Centrifugal Modeling of a Horizontal Dry Sand Layer, 250

Soil mechanics

- Plasticity and Constitutive Relations in Soil Mechanics, 265

Strength of Intact Geomechanical Materials, 273

Soil permeability

- Chemical Grouting in Soils Permeated by Water, 282

Electrical Resistivity for Estimating Ground-Water Recharge, 427

Model for Piping-Plugging in Earthen Structures, 278

Soil porosity

- Salt Problems from Increased Irrigation Efficiency, 431

Soil properties

Civil Engineering in the Arctic Offshore, 960

Geotechnical Characteristics of Residual Soils, 238

Measurement and Use of Shear Wave Velocity for Evaluating Dynamic Soil Properties, 994

New Method for Evaluating Liquefaction Potential, 239

Soil settlement

Dewatering—Avoiding Its Unwanted Side Effects, 974

Dynamic Centrifugal Modeling of a Horizontal Dry Sand Layer, 250

Soil Tunnel Test Section: Case History Summary, 305

Soil stabilization

Developments in New and Existing Materials, 973

Ground Freezing for Construction, 837

Soil strength

Crushing of Soil Particles, 298

Geotechnical Characteristics of Residual Soils, 238

Richart Commemorative Lectures, 1007

SUBJECT INDEX

Stability analysis

Soil tests

Advances in the Art of Testing Soils Under Cyclic Conditions, 955

Soil Security Test for Water Retaining Structures, 500

Soil water

Moisture Curve of Compacted Clay: Mercury Intrusion Method, 296

Soil-pipe interaction

Advances in Underground Pipeline Engineering, 956

Effects of Vehicles on Buried, High-Pressure Pipe, 685

Lateral Force-Displacement Response of Buried Pipe, 293

Uplift Force-Displacement Response of Buried Pipe, 292

Soils, saturated

Compressibility of Partly Saturated Soils, 284

Soil-structure interaction

Beam on Generalized Two-Parameter Foundation, 165

Effects of Predrilling and Layered Soils on Piles, 235

Model for Beam-Mode Buckling of Buried Pipelines, 140

Nonlinear Hysteretic Dynamic Response of Soil Systems, 167

Simplified Earthquake Analysis of Structures with Foundation Uplift, 527

Solar collectors

Wind Load Effects on Flat Plate Solar Collectors, 491

Solar ponds

Power Production and Air Conditioning by Solar Ponds, 228

Solar power generation

Power Production and Air Conditioning by Solar Ponds, 228

Solid waste management

Bound Glass in Shredded Municipal Solid Waste, 233

Demoresearch for Resource and Energy Recovery, 111

Separation of Solid Waste With Pulsed Airflow, 102

Solid Waste Management for Utility Reconversions, 229

Solids

Unified Analysis of Thickening, 50

Solubility

Calcium Sulfate Solubility in Organic-Laden Wastewater, 69

Space frames

A Space Frame Forecast, 910

Space structures

Building in Space, 884

Optimization Issues in the Design and Control of Large Space Structures, 999

Space truss

Building in Space, 884

Spatial distribution

Spatially Varying Rainfall and Floodrisk Analysis, 362

Specialization

Specialization as a Strategy for Growth, 464

Specific energy

Flow Over Side Weirs in Circular Channels, 325

Specifications

Avoiding Contract Disputes, 958

Product Specification Practices and Problems, 30

Statistical Analysis of Specification Compliance, 690

Spectral analysis

Hydrodynamic Pressures Acting Upon Hinged-Arc Gates, 352

Speed control

Speed (Road) Bumps: Issues and Opinions, 699

Spherical shells

Orthotropic Annular Shells on Elastic Foundations, 203

Spillways

Boardman Labyrinth—Crest Spillway, 341

Body-Fitted Coordinates for Flow under Sluice Gates, 372

Flood Storage in Reservoirs, 418

Innovative Powerhouse Designs, 989

Stepped Spillway Hydraulic Model Investigation, 410

Spreadsheets

Engineering with Spreadsheets, 930

Stability

Buckling of Orthotropic Cylinders due to Wind Load, 161

Catalytic Modification of Road Asphalt by Polyethylene, 671

Design of Slender Webs Having Rectangular Holes, 519

Effect of Support Conditions on Plate Strengths, 480

Effective Length of Luffing Jibs, 630

Punch-Through Instability of Jack-Up on Seabed, 264

Riprap Stability Under Wave Action, 795

Stability of Armor Units on Composite Slopes, 817

The Stability of Cylindrical Air-Supported Structures, 220

Stability of Frames with Tapered Built-up Members, 594

Symmetric Buckling of Hinged Ring Under External Pressure, 215

Torsional Instability in Hysteretic Structures, 156

Stability analysis

Analysis and Stability of Closed Surge Tanks, 383

Design and Analysis of Silos for Friction Forces, 555

Design Strengths for an Offshore Clay, 253

Determination of Critical Slope Failure Surfaces, 249

Instability of Thin Walled Bars, 180

Seismic Stability of Gentle Infinite Slopes, 270

Stability analysis

- Solution of Base Stability Analysis in Layered Soils, 291
Stability of Plane Frames Omitting Axial Strains, 612
Standard penetration tests
The Influence of SPT Procedures in Soil Liquefaction Resistance Evaluations, 313
Standards
KERMIT Protocol for Inter-Computer Data Transfer, 655
Research Needs for Infrastructure Management, 723
A Standard for the Measurement of Oxygen Transfer in Clean Water, 1013
Standard: Specifications for the Design and Construction of Composite Slabs and Commentary on Specifications for the Design and Construction of Composite Slabs, 1014
Standing waves
Simplified Design of Contractions in Supercritical Flow, 370
State planning
State Water Supply Management in New Jersey, 744
State-of-the-art reviews
Composite and Mixed Construction, 962
State of the Art: Rock Tunneling—*bTunnelling in Soil and Rock*, K.Y. Lo, ed., 1984, 14
State-of-the-Art Report on Redundant Bridge Systems, 629
Stormwater Detention Outlet Control Structures, 1015
Thermal Design Considerations in Frozen Ground Engineering, 1019
Uplift Behavior of Anchor Foundations in Soil, 1022
Static loads
Nonlinear Static and Dynamic Analysis of Plates, 136
Plate Deflections Using Orthogonal Polynomials, 208
Static tests
Friction Coefficient of Steel on Concrete or Grout, 502
Statistical analysis
Hysteretic Dampers in Base Isolation: Random Approach, 515
Investigation of Wind Effects on a Tall Guyed Tower, 616
Metal Distribution and Contamination in Sediments, 58
Optimum Characteristics of Isolated Structures, 642
Red Turn Arrow: An Information Theoretic Evaluation, 702
Slope Reliability and Response Surface Method, 236
Statistical Analysis of Specification Compliance, 690
Statistical Designation of Traffic Control Subareas, 684
Time Series Models for Treatment of Surface Waters, 51

1985 ASCE TRANSACTIONS

Statistics

- Civil Engineering and Engineering Enrollments, 116
Stayed columns
Behavior of Columns with Pretensioned Stays, 531
Steady flow
Acceleration Techniques for Coupled Nonlinear PDE's, 183
Surface Buoyant Jets in Steady and Reversing Crossflows, 364
Steady state
Dynamic Behavior of Pile Groups in Inhomogeneous Soil, 309
Liquefaction Evaluation Procedure, 275
Liquefaction Resistance of Thickened Tailings, 310
Periodic Response of Yielding Oscillators, 184
Residence Time in Stormwater Detention Basins, 55
Steady-State Dynamic Analysis of Hysteretic Systems, 222
Steel
Mixing Steel and Concrete, 851
Standard: Specifications for the Design and Construction of Composite Slabs and Commentary on Specifications for the Design and Construction of Composite Slabs, 1014
Structural Design, Cementitious Products, and Case Histories, 1016
Tubular Steel Trusses with Cropped Webs, 553
Steel columns
Inelastic Cyclic Analysis of Imperfect Columns, 546
Local Instability Tests of Plate Elements under Cyclic Uniaxial Loading, 537
Steel construction
Steel Construction Evaluation by MLR-Strategies, 29
Steel frames
Connection Flexibility and Steel Frames, 965
Design of a Seismic-Resistant Friction-Braced Frame, 643
Dynamic Analysis of a Forty-Four Story Building, 567
Effective Length of Columns in Steel Radial Gates, 621
Stability of Frames with Tapered Built-up Members, 594
Steel piles
Load Tests on Tubular Piles in Coralline Strata, 268
Wharf Stands on Stone Columns, 834
Steel pipes
Effects of Vehicles on Buried, High-Pressure Pipe, 685
Steel plates
Local Instability Tests of Plate Elements under Cyclic Uniaxial Loading, 537
Steel structures
Bolted Connections in Round Bar Steel Structures, 523
Functions for Relating Steel-Sections Properties, 645
High Strength Steel, 870

SUBJECT INDEX

- Inelastic Response of Tubular Steel Offshore Towers, 611
- Stiffeners**
Collapse of Plate Girders with Inclined Stiffeners, 494
- Stiffness**
Behavior of Timber Joints with Multiple Nails, 532
Design Spectra for Degrading Systems, 635
Extensional Stiffness of Precracked R/C Panels, 501
Flexure of Statically Indeterminate Cracked Beams, 223
Shear Modulus of Precracked R/C Panels, 487
Stiffness Properties of Fixed and Guyed Platforms, 485
Vertical Response of Arbitrarily Shaped Embedded Foundations, 274
- Stiffness coefficients**
Stiffness Matrices of Symmetric Structures, 571
- Stiffness matrix**
Effect of Cable Stiffness on Cable-Stayed Bridges, 596
- Elastic-Plastic-Softening Analysis of Plane Frames, 525
- Maximum Strength Design of Structural Frames, 549
- Stiffness Matrices of Symmetric Structures, 571
- Stiffness Matrix for Elastic-Softening Beams, 499
- Vibration of Tapered Beams, 471
- Stiffness methods**
Dynamics of Trusses by Component-Mode Method, 632
- Stochastic models**
Extreme Winds Simulated from Short-Period Records, 474
Response Maxima of a SDOF System under Seismic Action, 598
- Stochastic Model of Suspended Solid Dispersion, 319
- Stochastic Priority Model for Aggregate Blending, 43
- Stochastic processes**
Distortions Associated with Random Sea Simulators, 800
Energy Fluctuation Scale and Diffusion Models, 133
- Stoke's law**
A Fifth-Order Stokes Theory for Steady Waves, 773
Numerical Study of Finite Amplitude Wave Refraction, 763
Water Particle Velocities in Regular Waves, 771
- Storage coefficient**
Numerical Determination of Aquifer Constants, 386
- Storage racks**
Distortional Buckling of Steel Storage Rack Columns, 644
- Storage tanks**
Seismically Induced Fluid Forces on Elevated Tanks, 664
- Streambed armoring**
Spillage over an Inclined Embankment, 397
Trouble in Our Own Back Yard, 841
- Storm runoff**
Planning Detention Storage for Stormwater Management, 751
- Storm sewers**
Tampa Does It with Mirrors, 947
- Storm surges**
Computer Animation of Storm Surge Predictions, 334
Influence of Marginal Ice Cover on Storm Surges, 780
- Stormwater management**
Automatic Throttle Hose—New Flow Regulator, 434
Planning Detention Storage for Stormwater Management, 751
Proportional Weirs for Stormwater Pond Outlets, 853
Stormwater Detention Outlet Control Structures, 1015
- Strain**
Load History Effects on Structural Members, 510
- Strain distribution**
Effects of Weld Configurations on Strain Field, 618
- Strain energy**
Generalized Finite Element Evaluation Procedure, 497
- Strain hardening**
Polyaxial Yielding of Granular Rock, 189
Third-Variant Plasticity Theory for Low-Strength Concrete, 158
- Strain measurement**
Trench Effects on Blast-Induced Pipeline Stresses, 299
- Strain rate**
Constitutive Model for Loading of Concrete, 506
Flow Field Around Cones in Steady Penetration, 246
A Method for Finding Engineering Properties of Sealants, 177
Third-Invariant Model for Rate-Dependent Soils, 245
- Strain softening**
Strain Softening with Creep and Exponential Algorithm, 149
Wave Propagation in a Strain-Softening Bar: Exact Solution, 148
- Stratified flow**
Circulation Structure in a Stratified Cavity Flow, 337
- Dominant Shear Stresses in Arrested Saline Wedges, 807
- Seawater Circulation in Sewage Outfall Tunnels, 367
- Streambed armoring**
Drag of Oscillatory Waves on Spheres in a Permeable Bottom, 761
Scour at Cylindrical Bridge Piers in Armored Beds, 360

Streamflow

Efficient Water Use in Run-of-the-River Irrigation, 425

Streamflow forecasting

Extended Streamflow Forecasting Using NWSRFS, 736

Problems with Modeling Real-Time Reservoir Operations, 750

Streams

Stream Dissolved Oxygen Analysis and Control, 70

Strength

Biaxially Loaded L-Shaped Reinforced Concrete Columns, 633

Design Spectra for Degrading Systems, 635

Gable Frame Design Considerations, 566

Glass Strength Degradation under Fluctuating Loads, 560

Strength of Resin Mortar Tunnel, 225

Tubular Steel Trusses with Cropped Webs, 553

Stress

Curved Bridge Decks: Analytical Strip Solution, 564

Load History Effects on Structural Members, 510

Trench Effects on Blast-Induced Pipeline Stresses, 299

Wave Load-Submarine Pipeline-Seafloor Interaction, 686

Stress analysis

Approximations for Moments in Box Girders, 617

Formulation of Drucker-Prager Cap Model, 176

Linear Stress Analysis of Torospherical Head, 207

Stress distribution

Effects of Weld Configurations on Strain Field, 618

Elastic Analysis of Gusseted Truss Joints, 631

Nonuniform Bending-Stress Distribution (Shear Lag), 639

Partial Moment Redistribution in Cold-Formed Steel, 544

Partial Stress Redistribution in Cold-Formed Steel, 543

Strength of Resin Mortar Tunnel, 225

Stress intensity factor

Stress Intensity Factor Using Quarter Point Element, 138

Two Parameter Fracture Model for Concrete, 202

Stress relaxation

A Method for Finding Engineering Properties of Sealants, 177

Stress strain characteristics

Large Deflected Plates and Shells with Loading History, 164

Stress strain relations

Biaxial Stress-Strain Relations for Brick Masonry, 539

Polyaxial Yielding of Granular Rock, 189

Stress strain relations, soils

Crushing of Soil Particles, 298

Microcomputer Based Free Torsional Vibration Test, 287

Stress-strain curves

Continuum Damage Mechanics of Fiber Reinforced Concrete, 185

Third-Variant Plasticity Theory for Low-Strength Concrete, 158

Uniaxial Cyclic Stress-Strain Behavior of Structural Steel, 193

Structural analysis

Random Creep and Shrinkage in Structures: Sampling, 541

Snap-Through and Bifurcation in a Simple Structure, 179

Structural behavior

Composite Box Girder Bridge Behavior During Construction, 507

Hurricane Alicia: One Year Later, 986

Structural design

Design of Structures to Resist Nuclear Weapons Effects, 971

The Engineering Aesthetics of Tall Buildings, 978

Extreme Winds Simulated from Short-Period Records, 474

The Hybrid Arena, 849

Learning From Failure, 840

Putting CADD to Work, 929

Review of Nonlinear FE Methods with Substructures, 212

Simplified Earthquake Analysis of Structures with Foundation Uplift, 527

Structural Design, Cementitious Products, and Case Histories, 1016

Structural Optimization Using Reliability Concepts, 614

Structural Plastics Selection Manual, 1017

Structural Safety Studies, 1018

Structural dynamics

Dynamics of Steel Elevated Guideways—An Overview, 588

Investigation of Wind Effects on a Tall Guyed Tower, 616

Structural engineering

Get Involved with Cladding Design, 885

Structural failures

Sensitivity Analysis for Structural Errors, 579

Structural members

Dynamics of Trusses by Component-Mode Method, 632

Functions for Relating Steel-Sections Properties, 645

Load History Effects on Structural Members, 510

Nonlinear Response to Sustained Load Processes, 478

Probabilistic Basis for Design Criteria in Reinforced Concrete, 1001

Structural Design, Cementitious Products, and Case Histories, 1016

Structural models

Optimization Issues in the Design and Control of Large Space Structures, 999

Structural plastics

Structural Plastics Selection Manual, 1017

SUBJECT INDEX

Surveying

- Structural reliability** 823
Calibration of Bridge Fatigue Design Model, 548
Lateral-Torsional Motion of Tall Buildings, 627
Mechanistic Seismic Damage Model for Reinforced Concrete, 516
Models for Human Error in Structural Reliability, 554
Non-Normal Responses and Fatigue Damage, 206
Reliability of Ductile Systems with Random Strengths, 551
Sensitivity Analysis for Structural Errors, 579
Sensitivity of Reliability-Based Optimum Design, 577
Stochastic Evaluation of Seismic Structural Performance, 545
Structural Optimization Using Reliability Concepts, 614
Structural Safety Studies, 1018
Structural response
Variability in Long-Term Concrete Deformations, 583
Structural safety
Sensitivity Analysis for Structural Errors, 579
Structural Safety Studies, 1018
Structural settlement
Dewatering—Avoiding Its Unwanted Side Effects, 974
Structural steels
Composite and Mixed Construction, 962
Multi-Truss Design for Tower, 894
Uniaxial Cyclic Stress-Strain Behavior of Structural Steel, 193
Struts
Sparsely Connected Built-Up Columns, 509
Stub girders
Direct Model Test of Stub Girder Floor System, 563
Students
Challenges to Civil Engineering Educators and Practitioners—Where Should We Be Going?, 959
Civil Engineering and Engineering Enrollments, 116
Subdivisions
Subdivision Froude Number, 384
Subgrades
Analysis of Plates on a Kerr Foundation Model, 210
Moisture Curve of Compacted Clay: Mercury Intrusion Method, 296
Orthotropic Annular Shells on Elastic Foundations, 203
Use of NDT and Pocket Computers in Pavement Evaluation, 688
Submarine pipelines
Leakage from Ruptured Submarine Oil Pipeline, 711
Wave Load-Submarine Pipeline-Seafloor Interaction, 686
Wave-Induced Forces on Buried Pipeline, 792
Submerged discharge
Circulation Induced by Coastal Diffuser Discharge,
- Submerged flow**
Transport of Suspended Material in Open Submerged Streams, 363
Substructures
Dynamics of Trusses by Component-Mode Method, 632
Review of Nonlinear FE Methods with Substructures, 212
Subsurface drainage
Drainage Required to Manage Salinity, 429
Subsurface flow
Water Division at Low-Level Waste Disposal Sites, 95
Subsystems
Dynamic Characterization of Two-Degree-of-Freedom Equipment-Structure Systems, 127
Seismic Response of Light Subsystems on Inelastic Structures, 495
Subways
Slurry Walls Protect Harvard Square, 948
Supports
Lateral Stability of Beams with Elastic End Restraints, 155
Surf zone
Bore Height Measurement with Improved Wavestaff, 791
Qualitative Description of Wave Breaking, 770
Velocity Moments in Nearshore, 774
Surface defects
Predicting Sinkhole Collapse, 943
Surface drainage
Water Division at Low-Level Waste Disposal Sites, 95
Surface irrigation
Electronic Clocks for Timing Irrigation Advance, 420
Surface jets
Surface Buoyant Jets in Steady and Reversing Crossflows, 364
Surface waters
Hydraulics and Hydrology in the Small Computer Age, 987
Time Series Models for Treatment of Surface Waters, 51
Water Quality and Regional Water Supply Planning, 742
Water Quality Issues at Fossil Fuel Plants, 1024
Surface waves
Shallow Trenches and Propagation of Surface Waves, 142
Surveying
Definition of the Term "Engineering Surveying", 663
Engineering Surveying Manual, 979
The Surveyor and Written Boundary Agreements, 662
Surveys, data collection

Surveys, data collection

- Analysis of Events in Recent Structural Failures, 561
Challenges to Civil Engineering Educators and Practitioners—Where Should We Be Going?, 959
Suspended load
Bed Load or Suspended Load, 321
Bed Material Movement in Hyperconcentrated Flow, 376
Entrained and Bed-Load Sand Concentrations in Waves, 796
Transport of Suspended Material in Open Submerged Streams, 363
Suspended sediments
Distribution of Suspended Sediment in Large Waves, 828
Dredge-Induced Turbidity Plume Model, 790
Equilibrium Boundary Condition for Suspension, 322
Suspended Sediment—River Flow Analysis, 99
Varied Turbidity Current with Erosion and Deposition, 411
Suspended solids
Stochastic Model of Suspended Solid Dispersion, 319
Suspended structures
Ambient Vibration Studies of Golden Gate Bridge I: Suspended Structure, 153
Symmetry
Stiffness Matrices of Symmetric Structures, 571
System reliability
Reliability of Ductile Systems with Random Strengths, 551
Reliability of Systems under Renewal Pulse Loading, 198
Systems analysis
Modeling the California State Water Project, 731
Tailings
Liquefaction Resistance of Thickened Tailings, 310
Risk Analysis for Seismic Design of Tailings Dams, 283
Tall buildings
Control of Lateral-Torsional Motion of Wind-Excited Buildings, 172
Dynamic Analysis of a Forty-Four Story Building, 567
Dynamic Response of Tall Building to Wind Excitation, 521
The Engineering Aesthetics of Tall Buildings, 978
Lateral-Torsional Motion of Tall Buildings, 627
Mixing Steel and Concrete, 851
Multistory Frames Under Sequential Gravity Loads, 620
Multi-Truss Design for Tower, 894
Skyscraper (review), 854
Staggered Truss Adapted to High Rise, 878
Urban Transportation Impacts of Tall Buildings, 698
Wind Induced Lateral-Torsional Motion of Buildings, 608
Tanks

1985 ASCE TRANSACTIONS

- Analysis and Stability of Closed Surge Tanks, 383
Internal Seismic Forces on Submerged Oil Tanks, 825
Model for Flexible Tanks Undergoing Rocking, 134
Tanks, containers
Buckling of Orthotropic Cylinders due to Wind Load, 161
Taper
Stability of Frames with Tapered Built-up Members, 594
Vibration of Tapered Beams, 471
Taxation
Rationalizing Land Records, Mapping, Planning, 845
Teamwork
Effective Management of Engineering Design, 452
Technology
Entering Technical Management, 461
Research Needs for Infrastructure Management, 723
Transportation Requirements for High Technology Industrial Development, 703
Technology assessment
Hazardous Waste Surface Impoundment Technology, 88
High-Speed Rail Systems in the United States, 673
Land Treatment of Wastes: Concepts and General Design, 57
Local Area Networks, 654
Modern Material Ropeway Capabilities and Characteristics, 716
Plasticity and Constitutive Relations in Soil Mechanics, 265
Telecommunication
KERMIT Protocol for Inter-Computer Data Transfer, 655
Local Area Networks, 654
Role of Telecommunications in Timekeeping, 651
Telecommunications Access to National Geodetic Survey Integrated Data Base, 647
USGS Telecommunications Responding to Change, 649
Temperature
Climatic Effects on Construction, 27
Irrigation Scheduling Using Crop Indicators, 423
Temperature effects
Blowup of Concrete Pavements, 670
Catalytic Modification of Road Asphalt by Polyethylene, 671
Design Pressures in Circular Bins, 581
A Space Age Test Center, 888
Temperature Effects on Volume Measurements, 242
Thermal Design Considerations in Frozen Ground Engineering, 1019
Thermo-Mechanical Behavior of Seafloor Sediments, 302
Tendons
Test of Post-Tensioned Flat Plate with Banded Tendon, 589
Tensile strength

SUBJECT INDEX

- Design of Diagonal Roof Bracing Rods and Tubes, 538
General Failure Criterion for Isotropic Media, 137
Strength of Intact Geomechanical Materials, 273
Tension
Design of Diagonal Roof Bracing Rods and Tubes, 538
Tension leg platforms
Wind-Induced Response Analysis of Tension Leg Platforms, 472
Terrain mapping
Terrain Profiling Using Seasat Radar Altimeter, 661
Test equipment
Advances in the Art of Testing Soils Under Cyclic Conditions, 955
Testing
A Standard for the Measurement of Oxygen Transfer in Clean Water, 1013
Structural Behavior of Wood Shear Wall Assemblies, 512
Tests
Test Evaluation of Composite Beam Design Method, 477
Thawing
Freezing and Thawing of Soil-Water Systems, 985
Thaw Settlement Analysis for Buried Pipelines in *Permafrost-b-Pipelines in Adverse Environments II*, Mark Pickell, ed., 1983, 1
Thermal Design Considerations in Frozen Ground Engineering, 1019
Thermal pollution
Circulation Induced by Coastal Diffuser Discharge, 823
Thermal properties
Latent Heat of Frozen Saline Coarse-Grained Soil, 266
Thermal Design Considerations in Frozen Ground Engineering, 1019
Thermo-Mechanical Behavior of Seafloor Sediments, 302
Thermal stratification
Impact of Lake Acidification on Stratification, 101
Thermal stresses
Length-Thermal Stress Relations for Composite Bridges, 520
Theory for Thermally Induced Roof Noise, 615
Thickening
Liquefaction Resistance of Thickened Tailings, 310
Unified Analysis of Thickening, 50
Thickness
Comparison of Two Rigid Pavement Design Methods, 713
Rammed Earth House Construction, 306
Thin shell structures
Linear Stress Analysis of Torospherical Head, 207
Thin wall structures
Interactive Buckling in Thin-Walled Beam-Columns, 219
Local Buckling of Hollow Structural Sections, 540
Traffic congestion
- Three-dimensional analysis
Construction Load Analysis for Concrete Structures, 535
Tidal currents
Initial Dilution for Outfall Parallel to Current, 366
Tides
Modification of River's Tide by Its Discharge, 775
Open Boundary Condition for Circulation Models, 331
Predicted Extreme High Tides for California: 1983-2000, 809
Tieback restraint systems
Monitoring Saves a Site, 873
Slurry Walls Protect Harvard Square, 948
Timber construction
Behavior of Timber Joints with Multiple Nails, 532
Continuous Timber Diaphragms, 533
Decay, Weathering and Epoxy Repair of Timber, 490
Light-Frame Shear Wall Length and Opening Effects, 610
Repair Technique for Buckled Wood Truss Members, 530
Timber Bridge Decks, 869
Time dependence
Nonlinear Effects in Creep Buckling Analysis of Columns, 170
Time Series Models for Treatment of Surface Waters, 51
Time series analysis
Examining Air Travel Demand Using Time Series Data, 679
Time Series Modeling of Coastal Currents, 822
Topography
Water and Sediment Routing Through Curved Channels, 356
Torsion
Composite Box Girder Bridge Behavior During Construction, 507
Lateral-Torsional Motion of Tall Buildings, 627
Torsion of Composite Bars by Boundary Element Method, 200
Torsional Instability in Hysteretic Structures, 156
Torsional Response of Piles in Nonhomogeneous Soil, 285
Ultimate Load Behavior of Beams with Initial Imperfections, 550
Warping Moment Distribution, 498
Torsional vibration
Microcomputer Based Free Torsional Vibration Test, 287
Towers
Inelastic Response of Tubular Steel Offshore Towers, 611
A Moment of Inertia Invariant, 587
Toxic wastes
Environmental Engineering, 980
Traffic congestion
An Analytical Method of Traffic Flow Using Aerial

Traffic congestion

- Photographs, 697
Improvement of Congestion Detection on Expressways, 693
- Traffic control**
Improvement of Congestion Detection on Expressways, 693
Safe Conversions of Unwarranted Multi-Way Stop Signs, 707
Statistical Designation of Traffic Control Subareas, 684
- Traffic control devices**
Red Turn Arrow: An Information Theoretic Evaluation, 702
- Traffic flow**
An Analytical Method of Traffic Flow Using Aerial Photographs, 697
- Traffic management**
Flyovers and High Flow Arterial Concept, 678
Selected Bibliography on Traffic Operations, 682
- Traffic safety**
Consistency in Design for Low-Volume Rural Roads, 705
Development of Color Pavement in Korea, 691
Large Trucks in Urban Areas: A Safety Problem?, 692
Safe Conversions of Unwarranted Multi-Way Stop Signs, 707
Speed (Road) Bumps: Issues and Opinions, 699
- Traffic signals**
Are Pedestrians Safe at Right-On-Red Intersections?, 668
Flyovers and High Flow Arterial Concept, 678
Red Turn Arrow: An Information Theoretic Evaluation, 702
Statistical Designation of Traffic Control Subareas, 684
- Traffic signs**
Consistency in Design for Low-Volume Rural Roads, 705
Safe Conversions of Unwarranted Multi-Way Stop Signs, 707
- Traffic speed**
An Analytical Method of Traffic Flow Using Aerial Photographs, 697
Speed (Road) Bumps: Issues and Opinions, 699
- Traffic surveys**
An Analytical Method of Traffic Flow Using Aerial Photographs, 697
Red Turn Arrow: An Information Theoretic Evaluation, 702
- Traffic volume**
Overview of Skid Resistance on Ohio Pavements, 709
- Transducers**
Richart Commemorative Lectures, 1007
- Transient response**
Orthotropic Annular Shells on Elastic Foundations, 203
- Response of Variable Cross-Sectional Members to Waves, 781

1985 ASCE TRANSACTIONS

- Transmission lines**
Transmission Corridor Location Modeling, 676
- Transmission towers**
Design of Cold-Formed Latticed Transmission Towers, 624
Transmission Towers: Design of Cold-Formed Angles, 584
- Transport rate**
Fluid and Sediment Interaction over a Plane Bed, 371
Threshold Effects on Sediment Transport by Waves, 783
- Transportation**
Research Needs Related to the Nation's Infrastructure, 1006
- Transportation engineering**
Automated People Movers: Engineering and Management in Major Activity Centers, 957
Fracture Problems in the Transportation Industry, 984
Innovative Strategies to Improve Urban Transportation Performance, 990
- Organization and Management of Public Transport Projects**, 1000
- Transportation management**
Innovative Strategies to Improve Urban Transportation Performance, 990
Organization and Management of Public Transport Projects, 1000
- Transportation networks**
Rail Planning—Texas Style, 940
- Transportation planning**
Automated People Movers: Engineering and Management in Major Activity Centers, 957
Design and Construction of Dade County METROMOVER, 725
Innovative Strategies to Improve Urban Transportation Performance, 990
Planning Development with Transit Projects, 717
Urban Transportation Impacts of Tall Buildings, 698
- Transportation studies**
Performance Measures for New York State Inter-city Buses, 706
Transportation Requirements for High Technology Industrial Development, 703
- Transportation system costs**
Rail Planning—Texas Style, 940
- Transportation system financing**
Automated People Movers: Engineering and Management in Major Activity Centers, 957
Planning Development with Transit Projects, 717
Rail Planning—Texas Style, 940
Tampa Does It with Mirrors, 947
- Transportation systems**
Innovative Strategies to Improve Urban Transportation Performance, 990
Structural Design, Cementitious Products, and Case Histories, 1016
- Travel demand**

SUBJECT INDEX

- Estimating Recreational Travel and Economic Values of State Parks, 724
- Travel patterns**
Estimating Fuel Consumption from Engine Size, 694
- Generating a Bus Route O-D Matrix From On-Off Data, 712
- Trees**
Effect of Ambient Air Quality on Throughfall Acidity, 72
- Trenches**
Shallow Trenches and Propagation of Surface Waves, 142
- Trench Effects on Blast-Induced Pipeline Stresses, 299
- Two-Equation Turbulence Model for Flow in Trenches, 6
- Trends**
Issues in Engineering Education, 120
- Triaxial compression**
Expanded Shale Lightweight Fill: Geotechnical Properties, 290
- Triaxial stresses**
General Failure Criterion for Isotropic Media, 137
- Triaxial tests**
Endochronic Modeling of Sand in True Triaxial Test, 204
- Expanded Shale Lightweight Fill: Geotechnical Properties, 290
- Polyaxial Yielding of Granular Rock, 189
- Temperature Effects on Volume Measurements, 242
- Trihalomethanes**
Removal of Organic Matter in Water Treatment, 103
- Trucks**
Impact Studies on Small Composite Girder Bridge, 511
- Large Trucks in Urban Areas: A Safety Problem?, 692
- Trusses**
Dynamics of Trusses by Component-Mode Method, 632
- Monotone Behavior of Trusses Under Two Loadings, 484
- Multi-Truss Design for Tower, 894
- Optimum Design of Trusses with Buckling Constraints, 568
- Repair Technique for Buckled Wood Truss Members, 530
- Staggered Truss Adapted to High Rise, 878
- Tubular Steel Trusses with Cropped Webs, 553
- Tsunamis**
Scattering of Solitary Wave at Abrupt Junction, 779
- Tubes**
Analytical Modeling of Tube-In-Tube Structure, 552
- Design of Diagonal Roof Bracing Rods and Tubes, 538
- Load Tests on Tubular Piles in Coralline Strata, 268
- Tubular Steel Trusses with Cropped Webs, 553
- Tunnel construction**
Pipe Jacking Method for Long Curve Construction, 28
- Slashing Tunnel Costs, 936
- The Tunnel That Transformed Philadelphia, 886
- Tunneling a Bridge, 937
- Tunneling Operations and Equipment, 1021
- Unearthing Mt. Baker Tunnel, 946
- Tunnel linings**
Soil Tunnel Test Section: Case History Summary, 305
- Unearthing Mt. Baker Tunnel, 946
- Tunnel supports**
Slashing Tunnel Costs, 936
- Tunneling**
Pipe Jacking Method for Long Curve Construction, 28
- Soil Tunnel Test Section: Case History Summary, 305
- State of the Art: Rock Tunneling-*bTunnelling in Soil and Rock*, K.Y. Lo, ed., 1984, 14
- Tunneling Operations and Equipment, 1021
- Tunnels**
Drainage Tunnels Save Freeway Link, 915
- Dynamic Stresses and Displacements in a Buried Tunnel, 139
- Foam Grout Saves Tunnel, 924
- Seawater Circulation in Sewage Outfall Tunnels, 367
- Turbidity**
Dredge-Induced Turbidity Plume Model, 790
- Transport of Suspended Material in Open Submerged Streams, 363
- Varied Turbidity Current with Erosion and Deposition, 411
- Turbulence**
Bed Load or Suspended Load, 321
- A Critique of Camp and Stein's RMS Velocity Gradient, 96
- Equilibrium Boundary Condition for Suspension, 322
- Mathematical Model to Predict 3-D Wind Loading on Building, 141
- Near-Bed Velocity Distribution, 361
- Oblique Turbulent Jets in a Crossflow, 211
- Radial Turbulent Flow Between Parallel Plates, 359
- Structure of Turbulence in Compound Channel Flows, 394
- Two-Equation Turbulence Model for Flow in Trenches, 6
- Turbulent boundary layers**
Numerical Prediction of Wave Transformation, 815
- Turbulent Viscosity in Rough Oscillatory Flow, 793
- Turbulent flow**
LDA Measurements in Open Channel, 323
- Regime of Oscillatory Flow, 764
- Turbulent Viscosity in Rough Oscillatory Flow, 793
- Two-Equation Turbulence Model for Flow in Trenches, 6
- Two-dimensional flow**

Two-dimensional flow

- Acceleration Techniques for Coupled Nonlinear PDE's, 183
- Ultimate strength**
- Analysis of Two-Way Acting Composite Slabs, 470
 - Fiber-Reinforced Concrete Deep Beams with Openings, 575
 - Torsion of Concrete Beams with Large Openings, 483
 - Ultimate Load Behavior of Beams with Initial Imperfections, 550
- Ultimate strength design**
- Maximum Strength Design of Structural Frames, 549
- Underground storage**
- Ground-Water Contamination in Silicon Valley, 749
 - Ground-Water Protection in San Francisco Bay Area, 76
 - Trouble in Our Own Back Yard, 841
- Underpinning**
- Ground Freezing for Construction, 837
- Underwater structures**
- Force Spectrum of Horizontal Member, 209
- United States**
- Who Should Design Bridges?, 903
- Universities**
- BITNET: Inter-University Computer Network, 653
 - The University: Eisenhower's Warning Reconsidered, 110
- Unsteady flow**
- Modeling of Unsteady Flows in Alluvial Streams, 332
 - Residence Time in Stormwater Detention Basins, 55
- Uplift pressure**
- Average Uplift Computations for Hollow Gravity Dams, 344
 - Simplified Earthquake Analysis of Multistory Structures With Foundation Uplift, 641
 - Simplified Earthquake Analysis of Structures with Foundation Uplift, 527
 - Uplift Force-Displacement Response of Buried Pipe, 292
 - Wave-Induced Pressure under Gravity Structure, 765
- Uplift resistance**
- Uplift Behavior of Anchor Foundations in Soil, 1022
- Urban areas**
- Determination of Urban Flood Damages, 743
 - Large Trucks in Urban Areas: A Safety Problem?, 692
- Urban development**
- Residential Real Estate Development in Saudi Arabia, 721
 - Tampa Does It with Mirrors, 947
 - Urban Transportation Impacts of Tall Buildings, 698
 - Water Management for Small Urbanizing Watershed, 733

1985 ASCE TRANSACTIONS

Urban highways

- Improvement of Congestion Detection on Expressways, 693

Urban planning

- Master Plan for Irvine, 899

Urban renewal

- Mixed Use, Mixed Materials, 850

Urban transportation

- Design and Construction of Dade County METROMOVER, 725

- Flyovers and High Flow Arterial Concept, 678
- Innovative Strategies to Improve Urban Transportation Performance, 990

- Organization and Management of Public Transport Projects, 1000

- Selected Bibliography on Traffic Operations, 682

- Transportation Requirements for High Technology Industrial Development, 703

- The Tunnel That Transformed Philadelphia, 886

- Urban Transit: Equity Aspects, 719

- Urban Transportation Impacts of Tall Buildings, 698

U.S. Army Corps of Engineers

- Managing Construction of Israeli Air Bases in Negev—A Personal Perspective, 469

User fees

- Financing and Charges for Wastewater Systems, 982

- Tampa Does It with Mirrors, 947

- User-Pay Funding and Creative Capital Financing, 113

Utilities

- Second-Guessing the Engineer, 939

- Solid Waste Management for Utility Reconversions, 229

Utility theory

- Multi-Attribute Utility in Pavement Rehabilitation Decisions, 701

Validation

- Flux Use for Calibrating and Validating Models, 66

Value engineering

- Impacts of Constructability Improvement, 46

- Who Should Design Bridges?, 903

Valves

- Control Valve Flow Coefficients, 695

Vane shear tests

- Rate of Shear Effects on Vane Shear Strength, 241

Variability

- Variability in Long-Term Concrete Deformations, 583

Vegetation

- Overbank Flow with Vegetatively Roughened Flood Plains, 395

- Use of Vegetation for Abatement of Highway Traffic Noise, 722

Vehicle impact forces

- Impact Studies on Small Composite Girder Bridge, 511

SUBJECT INDEX

Vehicle safety

Large Trucks in Urban Areas: A Safety Problem?, 692

Vehicle usage

Estimating Fuel Consumption from Engine Size, 694

Large Trucks in Urban Areas: A Safety Problem?, 692

Vehicles

Fracture Problems in the Transportation Industry, 984

Markov Renewal Model for Maximum Bridge Loading, 192

Vibration Problems in Geotechnical Engineering, 1023

Vehicular traffic

Calibration of Bridge Fatigue Design Model, 548

Effects of Vehicles on Buried, High-Pressure Pipe, 685

Velocity

Estimating Mean Velocity in Mountain Rivers, 354

Experimental Measurement of Multiple-Jet Induced Flow, 191

Fall Velocity of Particles in Oscillating Flow, 346

Radial Turbulent Flow Between Parallel Plates, 359

Water Particle Velocities in Regular Waves, 771

Velocity distribution

Characteristics of Free Surface Flow Over a Gravel Bed, 438

Near-Bed Velocity Distribution, 361

Velocity gradient

A Critique of Camp and Stein's RMS Velocity Gradient, 96

Velocity profile

Bed Shear From Velocity Profiles: A New Approach, 324

LDA Measurements in Open Channel, 323

Vertical cylinders

Hydrodynamic Coefficients and Depth Parameter, 766

Vertical forces

Force Spectra from Partially Submerged Circular Cylinders in Random Seas, 816

Force Spectrum of Horizontal Member, 209

Vertical loads

Dynamic Behavior of Pile Groups in Inhomogeneous Soil, 309

Effects of Predrilling and Layered Soils on Piles, 235

Loading Rate Method for Pile Response in Clay, 252

Vertical production method

Network Scheduling Variations for Repetitive Work, 25

Vibration

Axisymmetrical Vibrations of Tanks—Numerical, 145

Collapse of SDOF System to Harmonic Excitation, 151

Effects of Vortex-Resonance on Nearby Galloping

Volume change

Instability, 160

Horizontal Response of Piles in Layered Soils, 5

Loads Due to Spectator Movements, 496

Shallow Trenches and Propagation of Surface Waves, 142

Silo as a System of Self-Induced Vibration, 481

Vibrating Nonuniform Plates on Elastic Foundation, 199

Vibration analysis

Free Vibration Analysis of Continuous Beams, 163

Vibration of Tapered Beams, 471

Vibration control

Noise and Vibration Measurement: Prediction and Mitigation, 998

Staggered Truss Adapted to High Rise, 878

Vibration effects

Vibration Criteria for Historic Buildings, 33

Vibration Problems in Geotechnical Engineering, 1023

Vibration measurement

Noise and Vibration Measurement: Prediction and Mitigation, 998

Vibration response

Simplified Earthquake Analysis of Concrete Gravity Dams: Combined Hydrodynamic and Foundation Interaction Effects, 168

Simplified Earthquake Analysis of Concrete Gravity Dams: Separate Hydrodynamic and Foundation Interaction Effects, 169

Vibration tests

Ambient Vibration Studies of Golden Gate Bridge I: Suspended Structure, 153

Ambient Vibration Studies of Golden Gate Bridge II: Pier-Tower Structure, 154

Experimental Foundation Impedance Functions, 277

Microcomputer Based Free Torsional Vibration Test, 287

Vibratory compactors

Compaction Characteristics of River Terrace Gravels, 288

Viscoelasticity

Nonlinear Effects in Creep Buckling Analysis of Columns, 170

Viscoplasticity

Third-Invariant Model for Rate-Dependent Soils, 245

Viscosity

Near-Bed Velocity Distribution, 361

Turbulent Viscosity in Rough Oscillatory Flow, 793

Void ratio

Liquefaction Evaluation Procedure, 275

Volatilization

Volatilization Rates of Organic Chemicals of Public Health Concern, 97

Volume change

Effect of Initial Shear on Cyclic Behavior of Sand, 311

Temperature Effects on Volume Measurements, 242

Vortex shedding

- Vortex shedding**
- Vortex-Induced Oscillation of Structures in Water, 777
- Vortices**
- Effect of Pier Spacing on Scour Around Bridge Piers, 385
- Effects of Vortex-Resonance on Nearby Galloping Instability, 160
- Head-Discharge Relation for Vortex Shaft, 379
- Wakes**
- Wake Displacement as Cause of Lift Force on Cylinder Pair, 132
- Walls**
- Flexural Strength of Masonry Prisms versus Wall Panels, 597
- New Analysis Techniques for Structural Masonry, 996
- Rammed Earth House Construction, 306
- RC Structural Walls: Seismic Design for Shear, 582
- Slurry Walls Protect Harvard Square, 948
- Structural Behavior of Wood Shear Wall Assemblies, 512
- Wave Forces on Vertical Walls, 805
- Z-Section Girts Under Negative Loading, 504
- Warpage**
- Nonuniform Bending-Stress Distribution (Shear Lag), 639
- Warping Moment Distribution, 498
- Waste disposal**
- Field Aging of Fixed Sulfur Dioxide Scrubber Waste, 231
- Hammering Out a New RCRA, 863
- Waste management**
- Hammering Out a New RCRA, 863
- Waste site cleanup**
- Ground-Water Protection in San Francisco Bay Area, 76
- Hazardous Waste Cleanup: The Preliminaries, 907
- Trouble in Our Own Back Yard, 841
- Waste Cleanup: Lessons Learned, 877
- Waste stabilization ponds**
- Dispersion Model for Waste Stabilization Ponds, 52
- Waste treatment**
- Phosphorus Reduction for Control of Algae, 86
- Stochastic Optimization/Simulation of Centralized Liquid Industrial Waste Treatment, 100
- Wastewater**
- Calcium Sulfate Solubility in Organic-Laden Wastewater, 69
- Wastewater disposal**
- Model of Dispersion in Coastal Waters, 316
- Wastewater disposal**
- Research Needs Related to the Nation's Infrastructure, 1006
- Wastewater management**
- Financing and Charges for Wastewater Systems, 982
- Pumped Wastewater Collection Systems Optimization, 87

1985 ASCE TRANSACTIONS

Wastewater treatment

- Carbon Columns: Success at Last, 842
- Development and Analysis of Equalization Basins, 107
- Financing and Charges for Wastewater Systems, 982
- Flow under Tilt Surface for High-Rate Settling, 67
- Generating Designs for Wastewater Systems, 92
- Is There Grit in Your Sludge?, 864
- Making Treatment Plants Work, 856
- Nitrogen Removal in Rapid Infiltration Systems, 104
- Nitrogenous Wastewater Treatment by Activated Algae, 53
- Water**
- Water Particle Velocities in Regular Waves, 771
- Water allocation policy**
- Efficient Water Use in Run-of-the-River Irrigation, 425
- Irrigation System Study in International Basin, 734
- Irrigation Water Requirements for Senegal River Basin, 435
- Water conservation**
- Calculating Effectiveness of Water Conservation Measures, 61
- Can We Save the Ogallala?, 906
- Impact of Conservation on Rates and Operating Costs, 738
- Salt Problems from Increased Irrigation Efficiency, 431
- Water consumption**
- Evapotranspiration Model for Semiarid Regions, 443
- Water demand**
- Efficient Water Use in Run-of-the-River Irrigation, 425
- Irrigation System Study in International Basin, 734
- Water depth**
- Depth-Controlled Wave Height, 789
- Field Data on Seaward Limit of Profile Change, 799
- Finite Water Depth Effects on Nonlinear Waves, 785
- Hydrodynamic Coefficients and Depth Parameter, 766
- Water distribution**
- Algorithm for Mixing Problems in Water Systems, 329
- Design of Stable Alluvial Canals in a System, 415
- Optimal Expansion of Water Distribution Systems, 59
- Simulating Cost and Quality in Water Distribution, 755
- Water flow**
- Cherepnov Water Lifter: Theory and Experiment, 374
- Dimensionless Formulation of Furrow Irrigation, 444
- Electronic Clocks for Timing Irrigation Advance, 420
- Fluid and Sediment Interaction over a Plane Bed, 371

SUBJECT INDEX

- Head-Discharge Relation for Vortex Shaft, 379
Modeling of Flow Velocity Using Weirs, 320
Water hyacinths
Nitrification in Water Hyacinth Treatment Systems, 94
Water level fluctuations
Water and Sediment Routing Through Curved Channels, 356
Water management
Computer Applications in Water Resources, 963
Effect of Irrigation Efficiencies on Nitrogen Leaching Losses, 432
Efficient Water Use in Run-of-the-River Irrigation, 425
Evapotranspiration Model for Semiarid Regions, 443
Report of Task Committee on Water Quality Problems Resulting from Increasing Irrigation Efficiency, 428
Water Management for Small Urbanizing Watershed, 733
Water pipelines
Cleaning and Lining Versus Parallel Mains, 728
Correction of Head Loss Measurements in Water Mains, 672
Water plans
Small Water Users—Planning Crisis, 916
Water pressure
Dynamic Soil and Water Pressures of Submerged Soils, 297
Water pricing
Pricing and Expansion of a Water Supply System, 727
Water quality
Attenuation Versus Transparency, 78
Basin-Wide Impacts of Irrigation Efficiency, 433
Chemical Reactions within Root Zone of Arid Zone Soils, 430
Computer Applications in Water Resources, 963
Dissolved Oxygen Model for a Dynamic Reservoir, 91
Environmental Engineering, 980
Flux Use for Calibrating and Validating Models, 66
Nitrogen Accountability for Fertile Streams, 75
Optimization of Water Quality Monitoring Networks, 757
Report of Task Committee on Water Quality Problems Resulting from Increasing Irrigation Efficiency, 428
Reservoir Modeling to Develop AWT Nitrate Standard, 12
Simultaneous In-Stream Nitrogen and D.O. Balancing, 74
Stormwater Detention Outlet Control Structures, 1015
Stream Dissolved Oxygen Analysis and Control, 70
Suspended Sediment—River Flow Analysis, 99
Water Quality and Regional Water Supply Planning, 742
Water Quality Issues at Fossil Fuel Plants, 1024
Watershed Management in the Eighties, 1025
- Water supply systems**
- Water quality control
Development and Management Aspects of Irrigation and Drainage Systems, 972
Water quality standards
Expression for Drinking Water Supply Standards, 68
Water resources
Computer Applications in Water Resources, 963
Exporting Colorado Water in Coal Slurry Pipelines, 739
Instream Flow Protection in Riparian States, 735
Irrigation System Study in International Basin, 734
Water Resources Engineering Education, 748
Water resources development
Agricultural Benefits for Senegal River Basin, 422
Development and Management Aspects of Irrigation and Drainage Systems, 972
Federal Policies in Water Resources Planning, 981
Inventorying Ground Water in Crystalline Rocks of Piedmont Region, 745
Two Projects Became One, 912
Water resources management
Development and Management Aspects of Irrigation and Drainage Systems, 972
Federal Policies in Water Resources Planning, 981
Modeling the California State Water Project, 731
Simulator for Water Resources in Rural Basins, 375
Water resources
Marsh Enhancement by Freshwater Diversion, 726
Water reuse
Reuse System Design for Border Irrigation, 426
Water rights
Development and Management Aspects of Irrigation and Drainage Systems, 972
Exporting Colorado Water in Coal Slurry Pipelines, 739
Instream Flow Protection in Riparian States, 735
Satisfying Instream Flow Needs under Western Water Rights, 737
Water supply
Exporting Colorado Water in Coal Slurry Pipelines, 739
Research Needs Related to the Nation's Infrastructure, 1006
Reservoir Modeling to Develop AWT Nitrate Standard, 12
Water Quality and Regional Water Supply Planning, 742
Water Quality Issues at Fossil Fuel Plants, 1024
Water supply forecasting
Calculating Effectiveness of Water Conservation Measures, 61
Water supply systems
Algorithm for Mixing Problems in Water Systems, 329
Capacity Expansion of Sao Paulo Water Supply, 741
Leaching of Tetrachloroethylene from Vinyl-Lined Pipe, 49
Optimal Expansion of Water Distribution Systems,

- 59
Pricing and Expansion of a Water Supply System, 727
Simulating Cost and Quality in Water Distribution, 755
Small Water Users—Planning Crisis, 916
State Water Supply Management in New Jersey, 744
Water Management for Small Urbanizing Watershed, 733
Water surface
Water Surface at Change of Channel Curvature, 369
Water surface profiles
Channel Width Adjustment During Scour and Fill, 402
Equations for Plane, Moderately Curved Open Channel Flows, 349
Flow Over Side Weirs in Circular Channels, 325
Generalized Water Surface Profile Computations, 340
Water tanks
Cherepnov Water Lifter: Theory and Experiment, 374
Water temperature
Correction of Head Loss Measurements in Water Mains, 672
Water treatment
Flow under Tilt Surface for High-Rate Settling, 67
Fundamentals and Theory of Air Scour, 11
Removal of Organic Matter in Water Treatment, 103
Removal of Radon from Water Supplies, 83
Time Series Models for Treatment of Surface Waters, 51
Water Quality Issues at Fossil Fuel Plants, 1024
Water treatment plants
Particles, Pretreatment, and Performance in Water Filtration-*b*Environmental Engineering, James C. O'Shaughnessy, ed., 1985, 13
Particles, Pretreatment, and Performance in Water Filtration, 105
Project Mixes Oil and Water, 895
Water use
Evapotranspiration of Small Conifers, 441
Small Water Users—Planning Crisis, 916
Water waves
Distortions Associated with Random Sea Simulators, 800
Nineteenth Coastal Engineering Conference: Proceedings of the International Conference, 997
Numerical Study of Finite Amplitude Wave Refraction, 763
Wave-Induced Pressure under Gravity Structure, 765
Waterfront facilities
Hurricane Damage on Galveston's West Beach, 595
Watershed management
Development and Management Aspects of Irrigation and Drainage Systems, 972

- A Tale of Six Cities, 866
Watershed Management in the Eighties, 1025
Watersheds
Effect of Ambient Air Quality on Throughfall Acidity, 72
Evaluation of Hydrologic Models Used to Quantify Major Land-Use Change Effects, 413
Water Management for Small Urbanizing Watershed, 733
Waterways
Locks with Devices to Reduce Salt Intrusion, 826
Wave action
Riprap Stability Under Wave Action, 795
Wave attenuation
Hinged Floating Breakwater, 818
Wave Damping by Soil Motion, 762
Wave climatology
Wave Statistical Uncertainties and Design of Breakwater, 820
Wave damping
Influence of Marginal Ice Cover on Storm Surges, 780
Wave Damping by Soil Motion, 762
Wave diffraction
FEM Solution of 3-D Wave Interference Problems, 803
A Harbor Ray Model of Wave Refraction-Diffraction, 760
Numerical Prediction of Wave Transformation, 815
Refraction-Diffraction Model for Linear Water Waves, 821
Scattering of Solitary Wave at Abrupt Junction, 779
Wave Forces on an Elliptic Cylinder, 787
Wave Forces on Inclined Circular Cylinder, 819
Wave energy
Significant Wave Height for Shallow Water Design, 814
Wave forces
FEM Solution of 3-D Wave Interference Problems, 803
Force Spectra from Partially Submerged Circular Cylinders in Random Seas, 816
Force Spectrum of Horizontal Member, 209
Forces on Horizontal Cylinder Towed in Waves, 827
Response of Variable Cross-Sectional Members to Waves, 781
Rubble Mounds: Hydraulic Conductivity Equation, 811
Rubble Mounds: Numerical Modeling of Wave Motion, 812
Wave Forces on an Elliptic Cylinder, 787
Wave Forces on Inclined Circular Cylinder, 819
Wave Forces on Vertical Walls, 805
Wave Interference Effects by Finite Element Method, 758
Wave-Induced Forces on Buried Pipeline, 792
Wave height
Bore Height Measurement with Improved Wavestaff, 791

SUBJECT INDEX

- Depth-Controlled Wave Height, 789
Distribution of Maximum Wave Height, 768
Significant Wave Height for Shallow Water Design, 814
Wave Forces on Vertical Walls, 805
Wave Statistical Uncertainties and Design of Breakwater, 820
Wave measurement
Automated Remote Recording and Analysis of Coastal Data, 784
Bore Height Measurement with Improved Wave-staff, 791
Episodicity in Longshore Sediment Transport, 794
Interaction of Random Waves and Currents, 776
Wave propagation
Shallow Trenches and Propagation of Surface Waves, 142
Wave Propagation in a Strain-Softening Bar: Exact Solution, 148
Wave refraction
Finite Element Modelling of Nonlinear Coastal Currents, 786
A Harbor Ray Model of Wave Refraction-Diffract, 760
Numerical Prediction of Wave Transformation, 815
Numerical Study of Finite Amplitude Wave Refraction, 763
Refraction-Diffract Model for Linear Water Waves, 821
Wave runup
Wave Runup Formulas for Smooth Slopes, 767
Wave scattering
Scattering of Solitary Wave at Abrupt Junction, 779
Wave spectra
Depth-Controlled Wave Height, 789
Interaction of Random Waves and Currents, 776
A Method for Investigation of Steady State Wave Spectra in Bays, 801
Wind Wave Growth in Shallow Water, 810
Wave tanks
Drag of Oscillatory Waves on Spheres in a Permeable Bottom, 761
Inverted Shear Modulus from Wave-Induced Soil Motion, 240
Wave velocity
Measurement and Use of Shear Wave Velocity for Evaluating Dynamic Soil Properties, 994
Waves
Distribution of Suspended Sediment in Large Waves, 828
A Fifth-Order Stokes Theory for Steady Waves, 773
Scattering of Solitary Wave at Abrupt Junction, 779
Stability of Armor Units on Composite Slopes, 817
Threshold Effects on Sediment Transport by Waves, 783
Water Particle Velocities in Regular Waves, 771
Weathering
Decay, Weathering and Epoxy Repair of Timber, 490
Webs
- Wind speed**
- Fiber-Reinforced Concrete Deep Beams with Openings, 575
Wedges
Streambank Stability, 267
Weight
Gravimetric Statistics of Riprap Quarries, 797
Weirs
Flow Over Side Weirs in Circular Channels, 325
Modeling of Flow Velocity Using Weirs, 320
Proportional Weirs for Stormwater Pond Outlets, 853
Submerged Weirs, 326
Weirds
Effects of Weld Configurations on Strain Field, 618
End-Bolted Cover Plates, 547
Well performance
Volumetric Approach to Type Curves in Leaky Aquifers, 345
Wells
Simulation of Two-Fluid Response in Vicinity of Recovery Wells, 390
Wharves
Congestion Cost and Pricing of Seaports, 782
Wharf Stands on Stone Columns, 834
White noise
Optimum Characteristics of Isolated Structures, 642
Wind
Indicator of Residential Roof Strength in Wind, 599
Mixed-Layer Deepening in Lakes after Wind Setup, 396
Wind direction
Multivariate Distributions of Directional Wind Speeds, 529
Wind forces
Wind Induced Lateral-Torsional Motion of Buildings, 608
Wind loads
Buckling of Orthotropic Cylinders due to Wind Load, 161
Control of Lateral-Torsional Motion of Wind-Excited Buildings, 172
Dynamic Response of Tall Building to Wind Excitation, 521
Lateral-Torsional Motion of Tall Buildings, 627
Mathematical Model to Predict 3-D Wind Loading on Building, 141
Wind Load Effects on Flat Plate Solar Collectors, 491
Wind-Induced Response Analysis of Tension Leg Platforms, 472
Wind pressure
Collapse of SDOF System to Harmonic Excitation, 151
Wind-Induced Fatigue on Low Metal Buildings, 522
Wind speed
Extreme Winds Simulated from Short-Period Records, 474
Multivariate Distributions of Directional Wind

Wind speed

- Speeds, 529
Structural Performance and Wind Speed-Damage Correlation in Hurricane Alicia, 634

Wind velocity

- Investigation of Wind Effects on a Tall Guyed Tower, 616
Wind-Induced Response Analysis of Tension Leg Platforms, 472

Window glass

- Hurricane Alicia: One Year Later, 986
Laminated Glass Units under Uniform Lateral Pressure, 536

Wire rope

- Effective Length of a Fractured Wire in Wire Rope, 182

Women

- Civil Engineering and Engineering Enrollments, 116

Wood

- Decay, Weathering and Epoxy Repair of Timber, 490

- Lateral Stability of Beams with Elastic End Restraints, 155

- Repair Technique for Buckled Wood Truss Members, 530

1985 ASCE TRANSACTIONS

- Structural Behavior of Wood Shear Wall Assemblies, 512

Wood beams

- Test Evaluation of Composite Beam Design Method, 477

Wood floors

- Continuous Timber Diaphragms, 533
Wood Floor Behavior: Experimental Study, 628

Wooden structures

- Behavior of Wood-Framed Shear Walls, 578
Hurricane Damage on Galveston's West Beach, 595
Racking Deformations in Wood Shear Walls, 486
Relative Reliability of Dimension Lumber in Bending, 592

Yield strength

- Effect of Support Conditions on Plate Strengths, 480

Yield stress

- Comparison of Natural and Remolded Plastic Clay, 280
Extreme-Value Statistics for Nonlinear Stress Combination, 194

Author Index

- Abbott, Eldon L.**
Slurry Walls Protect Harvard Square, 948
- Abdel-Ghaffar, Ahmed M.**
Ambient Vibration Studies of Golden Gate Bridge I: Suspended Structure, 153
- Ambient Vibration Studies of Golden Gate Bridge II: Pier-Tower Structure, 154
- see Prevost, Jean H., 281
see Prevost, Jean-Hervé, 167
- Abdel-Rohamn, Mohamed**
Impact Effect on R.C. Slabs: Analytical Approach, 569
- Abdel-Sayed, George**
Cold-Formed Steel Farm Structures Part I: Grain Bins, 600
- Cold-Formed Steel Farm Structures Part II: Barrel Shells, 601
- Abdul-Shafi, A.**
Beam Analogy for Vertical Curves, 951
- Conjugate Frame for Shear and Flexure, 508
- Abkowitz, Mark**
Performance Measures for New York State Inter-city Buses, 706
- Abrams, Daniel P.**
see McNary, W. Scott, 524
- Abrams, Donald B.**
see McMahon, Donald R., 873
- Abt, S. R.**
see Richardson, J. R., 388
- Abt, Steven R.**
Culvert Slope Effects on Outlet Scour, 401
- Acar, Yalcin B.**
see Tumay, Mehmet T., 246
- Achanta, Ramakrishna Rao**
see Vedula, Subrahmanyam, 324
- Adams, E. Eric**
Circulation Induced by Coastal Diffuser Discharge, 823
- Agerskov, Henning**
Bolted Connections in Round Bar Steel Structures, 523
- Aggour, M. S.**
Field Aging of Fixed Sulfur Dioxide Scrubber Waste, 231
- Agrawal, Sunil**
Modified Approach to Evaluate Column Test Data, 63
- Agrawal, T. P.**
see Krishna, P., 596
- Aguilar, José**
see Medina, Josep R., 800
- Aguirre M., Eduardo J.**
- see Murphy, Peter J., 321
- Aguwa, A. A.**
see Noll, K. E., 81
- Ahrens, John P.**
Wave Runup Formulas for Smooth Slopes, 767
- Ahuja, Hira N.**
A Simulation Model to Forecast Project Completion Time, 41
- Akan, A. Osam**
Kinematic-Wave Method for Peak Runoff Estimates, 700
- Akan, A. Osman**
Overland Flow Hydrographs for SCS Type II Rainfall, 436
- Similarity Solution of Overland Flow on Pervious Surface, 381
- Akiyama, J.**
Varied Turbidity Current with Erosion and Deposition, 411
- Akiyama, Narioki**
see Yamamoto, Kazuyuki, 631
- Aktan, Ahmet E.**
RC Structural Walls: Seismic Design for Shear, 582
- Albrecht, Pedro**
see Wattar, Fateh, 547
- Alfrink, Ben J.**
Two-Equation Turbulence Model for Flow in Trenches, 6
- Ali, M. Ashraf**
see Sridharan, Srinivasan, 219
- Allen, R. H.**
Limit State Analysis of Arch Segment, 557
- Al-Sulaimani, Ghazi J.**
Design Spectra for Degrading Systems, 635
- Altschaeffl, A. G.**
see Prapaharan, S., 296
- American Society of Civil Engineers**
Standard: Specifications for the Design and Construction of Composite Slabs and Commentary on Specifications for the Design and Construction of Composite Slabs, 1014
- Amirtharajah, Appiah**
Fundamentals and Theory of Air Scour, 11
- Amos, C. Kenna, Jr.**
Hazardous Waste Cleanup: The Preliminaries, 907
- Amy, Gary L.**
see Collins, Michael R., 103
- Anand, Subhash C., ed.**
New Analysis Techniques for Structural Masonry, 996
- Anand, Yogindra N., ed.**
Seismic Experience Data—Nuclear and Other

- Plants, 1012
Structural Design, Cementitious Products, and Case Histories, 1016
- Anastasiou, Kostas
see Hedges, Terence S., 776
- Anders, John C.
see Highter, William H., 269
- Andersen, Ole H.
see Fredsoe, Jorgen, 828
- Anderson, Duwayne M., ed.
Freezing and Thawing of Soil-Water Systems, 985
- Anderson, Jon Baxter
A Method for Finding Engineering Properties of Sealants, 177
- Andersson, Helge I.
Spillage over an Inclined Embankment, 397
- Ang, Alfred H. -S.
see Park, Young-Ji, 516
- Ang, Alfredo H. -S.
see Park, Young-Ji, 517
see Sues, Robert H., 545
- Angeles, Honorato L.
Efficient Water Use in Run-of-the-River Irrigation, 425
- Appelbaum, Stuart J.
Determination of Urban Flood Damages, 743
- Arditi, David
Construction Productivity Improvement, 17
Railway Route Rationalization: A Valuation Model, 675
- Arici, Marcello
Analogy for Beam-Foundation Elastic Systems, 576
- Arnold, Gregory C.
see Salamonowicz, Paul H., 661
- Arnold, J. G.
see Williams, J. R., 375
- Arockiasamy, M.
Response of Semi-Submersibles in Ice Environment, 667
- Aronberg, Ralph
Motivating and Managing Engineers, 112
- Arora, Jasbir S.
see Ryu, Yeon S., 212
- Arulanandan, Kendiah
see Arulmoli, Kendiah, 239
- Arulmoli, Kendiah
New Method for Evaluating Liquefaction Potential, 239
- Arumugam, Kanapathyplly
see Mason, Peter J., 330
- Arya, A. S.
see Krishna, P., 596
- Asawa, Girdhari, L.
Radial Turbulent Flow Between Parallel Plates, 359
- Asbury, Gregory E.
see Hribar, John P., 460
- Assadi, Mahyar
Stability of Continuously Restrained Cantilevers, 217
- Astaneh-Asl, Abolhassan
Cyclic Out-of-Plane Buckling of Double-Angle Bracing, 542
- Atkinson, Gail M.
see Vick, Steven, G., 283
- Au, Tung
see Hendrickson, Chris, 458
- Auckle, Dev
see Ramamurthy, A. S., 417
- Aukrust, Trond
Turbulent Viscosity in Rough Oscillatory Flow, 793
- Austin, Mark A.
Design of a Seismic-Resistant Friction-Braced Frame, 643
- Avent, R. Richard
Decay, Weathering and Epoxy Repair of Timber, 490
- Ayyub, Bilal M.
Decisions in Construction Operations, 42
- Azad, Abdul K.
see Baluch, Mohammed H., 223
- Azia, Nadim M.
Sediment Transport in Shallow Flows, 399
- Babcock, Susan, M.
see Schreyer, Howard L., 158
- Baber, Thomas T.
Random Vibration of Degrading, Pinching Systems, 186
- Badie, A.
see Wang, M. C., 289
- Bagley, Jay M.
Satisfying Instream Flow Needs under Western Water Rights, 737
- Bahndorf, Joachim
see Gründig, Lother, 659
- Bakan, Lloyd H.
The Client Relationship: Effective Marketing Steps, 446
- Baker, Christopher J.
see Elliott, Keith R., 385
- Baker, Clyde N., Jr., ed.
Drilled Piers and Caissons II, 976
- Baker, Wallace Hayward, ed.
Issues in Dam Grouting, 991
- Balendra, Thambirajah
Vibrational Characteristics of Multi-Cellular Structures, 559
- Baligh, Mohsen M.
Strain Path Method, 295
- Ballard, G. Stephen

AUTHOR INDEX

Bessette

- see Wright, David W., 942
- Ballofet, Armando**
Lower Mississippi Salinity Analysis, 335
- Balloffet, Armando**
see Borah, Deva K., 802
- Baluch, M. H.**
see Voyatzis, G. Z., 195
- Baluch, Mohammed H.**
Flexure of Statically Indeterminate Cracked Beams, 223
- Banerjee, Prasanta K.**
see Davies, Trevor G., 309
- Bang, Sangchul**
Active Earth Pressure Behind Retaining Walls, 257
- Bankier, Jennifer K.**
Computers and Group Communications: The Law:Forum Experiment, 652
- Banz, Iris**
Calcium Sulfate Solubility in Organic-Laden Wastewater, 69
- Barker, Donald B.**
Concrete Fracture in CLWL Specimen, 162
- Barlow, Kenneth J.**
Effective Management of Engineering Design, 452
- Basco, David R.**
Qualitative Description of Wave Breaking, 770
- Baskin, Don E.**
Unified Analysis of Thickening, 50
- Bathurst, James C.**
Flow Resistance Estimation in Mountain Rivers, 355
- Baumann, E. Robert**
see Stephenson, Roger V., 54
- Baxter, Terry E.**
see Lane, Dennis D., 60
- Bazant, Zdenek P.**
Microplane Model for Progressive Fracture of Concrete and Rock, 159
- Bažant, Zdeněk P.**
Random Creep and Shrinkage in Structures: Sampling, 541
- Bazant, Zdenek P.**
Strain Softening with Creep and Exponential Algorithm, 149
- Triple Power Law for Concrete Creep, 130**
- Wave Propagation in a Strain-Softening Bar: Exact Solution, 148**
- Bean, James E.**
see Schreyer, Howard L., 245
- Bear, Jacob**
Discussion of: Unsteady Seepage Analysis of Wallace Dam, 4
- Beason, W. Lynn**
see Nelson, James K., 599
- Bechteler, Wilhelm**
- Stochastic Model of Suspended Solid Dispersion, 319**
- Becker, Julie C.**
see Thompson, James A., 902
- Becker, Leonard**
see Braga, Benedito P. F., Jr., 741
- Becker, Roger J.**
Get Involved with Cladding Design, 885
- Bédard, Claude**
Application of NLFEA to Concrete Structures, 640
- Bedford, Keith W.**
see Libicki, Charles M., 334
- Bedient, Philip B.**
see Todd, David A., 70
- Beedle, Lynn S., ed.**
Rehabilitation, Renovation, and Reconstruction of Buildings, 1005
- Beggs, Thomas F.**
see Ruth, Byron E., 943
- Behr, R. A.**
Laminated Glass Units under Uniform Lateral Pressure, 536
- Belegundu, Ashok D.**
Lagrangian Approach to Design Sensitivity Analysis, 166
- Bell, Lansford C.**
Microcomputer Data Management System, 687
- Bella, David A.**
The University: Eisenhower's Warning Reconsidered, 110
- Belytschko, Ted B.**
see Bazant, Zdenek P., 148
- Bennett, F. Lawrence, d**
Civil Engineering in the Arctic Offshore, 960
- Bennett, Michael S.**
Optimal Design of Detention and Drainage Channel Systems, 732
- Benson, Ronald E., Jr.**
Hazardous Waste Disposal as Concrete Admixture, 77
- Self-Cleansing Slope for Partially Full Sewers, 108**
- Bergman, L. A.**
see Spencer, B. F., Jr., 221
- Berk, William L.**
see Stephenson, Roger V., 54
- Bernstein, Corinne S.**
Computers Aren't Infallible, 926
- Hammering Out a New RCRA, 863**
- Private Funds, Public Projects, 920**
- Rail Planning—Texas Style, 940**
- Berry, Brent A.**
Oil Slicks in Ice Covered Rivers, 339
- Bertero, Vitelmo V.**
see Aktan, Ahmet E., 582
- Bessette, Allan E.**

- Test Evaluation of Composite Beam Design Method, 477
- Bewtra, Jatinder K.**
see Agrawal, Sunil, 63
- Bhalla, Manmohan K.**
Pedestrian Traffic on Cincinnati Skywalk System, 674
- Bhargava, D. S.**
Model for Moving Media Reactor Performance, 89
- Bhargava, Devendra Swaroop**
Expression for Drinking Water Supply Standards, 68
- Bhat, Rama B.**
Plate Deflections Using Orthogonal Polynomials, 208
- Bhat, Shankaranarayana U.**
Rigid-Plastic Analysis of Floating Plates, 174
- Bhatia, Shobha K.**
see Ishibashi, Isao, 311
- Bhatt, D. J.**
see Bhargava, D. S., 89
- Bhatt, Nishith R.**
Impact of Conservation on Rates and Operating Costs, 738
- Bhattarai, Kiran K.**
see Polprasert, Chongrak, 52
- Bhatti, M. Asghar**
see Yang, Ren-Jye, 136
- Bhatti, Majeed H.**
see Chu, Kuang-Han, 135
- Bhave, Pramod R.**
Optimal Expansion of Water Distribution Systems, 59
- Billings, H. J.**
Hydraulic Fill Dam Made Earthquake Resistant, 881
- Birkemeier, William A.**
Field Data on Seaward Limit of Profile Change, 799
- Birkemoe, Peter C.**
see Polyzois, Dimos, 504
- Birnberg, Howard G.**
Communicating the Company's Operating Performance Data, 447
- Birrell, George S.**
General Contractors' Management: How Subs Evaluate It, 36
- Bjorhovde, Reidar**
Tests of Full-Size Gusset Plate Connections, 513
- Bjornbak-Hansen, Jorgen**
see Agerskov, Henning, 523
- Blumberg, Alan F.**
Open Boundary Condition for Circulation Models, 331
- Blunk, Raymond J.**
Design Flexibility Cuts Costs, 838
- Bokalan, Alireza**
Effects of Vortex-Resonance on Nearby Galloping Instability, 160
- Wake Displacement as Cause of Lift Force on Cylinder Pair, 132**
- Bonasso, Sam**
see Neumann, Edward S., 716
- Bondada, Murthy V. A., ed.**
see Neumann, Edward S., ed., 957
- Booker, John R.**
see Rowe, R. Kerry, 261
- Borah, Deva K.**
Beach Evolution Caused by Littoral Drift Barrier, 802
- see Ballofet, Armando, 335**
- Borchering, John D.**
see Chang, Luh-Maan, 48
- Botelho, Dirceu L. R.**
see Iwan, Wilfred D., 777
- Bowman, Mark D.**
see Liu, Xila, 535
- Boyer, L. T.**
see Farid, Foad, 44
- Boynton, Stephen S.**
Hydraulic Conductivity Tests on Compacted Clay, 260
- Braga, Benedito P. F., Jr.**
Capacity Expansion of Sao Paulo Water Supply, 741
- Branco, Fernando A.**
Composite Box Girder Bridge Behavior During Construction, 507
- Brandow, Jeffrey E.**
see Lowry, Jerry D., 83
- Bras, Rafael L.**
Spatially Varying Rainfall and Floodrisk Analysis, 362
- Brater, Ernest F.**
see Ponce-Campos, C. David, 761
- Braun, Bernd**
Ground Freezing for Construction, 837
- Brennan, D. D., ed.**
Tunneling Operations and Equipment, 1021
- Brevik, Iver**
see Aukrust, Trond, 793
- Briassoulis, Demetris**
Design and Analysis of Silos for Friction Forces, 555
- Briaud, Jean-Louis**
Loading Rate Method for Pile Response in Clay, 252
- Bridgeman, Phyllis G.**
see Walker, William R., 748
- Britvec, S. J.**
Post-Buckling Equilibrium of Hyperstatic Lattices, 143

AUTHOR INDEX

Chang

- Brocard, Dominique N.
Surface Buoyant Jets in Steady and Reversing Crossflows, 364
- Brown, C. B., ed.
see Yao, James T. P., ed., 1018
- Brown, Gerald
see Koehn, Enno, 27
- Brown, Mary F., ed.
see Kraft, Walter H., ed., 1003
- Brownlie, William R.
Compilation of Alluvial Channel Data, 387
- Buchanan, Thomas J.
Professional Registration of Government Engineers, 117
- Buckner, C. Dale
see Nadaskay, Anthony J., 563
- Budhu, Munirah
Lateral Stresses Observed in Two Simple Shear Apparatus, 271
- Bulleit, William M.
Relative Reliability of Dimension Lumber in Bending, 592
- Bullock, Geoffrey N.
Water Particle Velocities in Regular Waves, 771
- Burn, Donald H.
River Flow Forecasting Model for the Sturgeon River, 336
- Burns, Joseph G., ed.
The Engineering Aesthetics of Tall Buildings, 978
- Burns, Ned H.
Test of Post-Tensioned Flat Plate with Banded Tendon, 589
see Kosut, Gary M., 590
- Busch, J. R.
see Yoo, Kyung H., 442
- Bushnak, Adil
see Mohan, Satish, 701
- Buyukozturk, Oral
see Chen, En-Sheng, 173
see Wium, Daniel J. W., 583
- Byers, William G.
Frequency of Railway Bridge Damage, 572
- Cabinett, Harold D.
see Dow, John O., 497
- Calash, Antoun Y.
see Razzaq, Zia, 518
- Campanella, Richard G.
see Robertson, Peter K., 256
- Can, Emre K.
Problems with Modeling Real-Time Reservoir Operations, 750
see Easa, Said M., 34, 43
- Capecchi, Danilo
Steady-State Dynamic Analysis of Hysteretic Systems, 222
- Carr, Peter
Critical Load Program, 874
- Carr, Robert I.
see Nowak, Andrzej S., 579
- Carroll, T. Owen
see Chan, Yupo, 724
- Cassidy, John J.
Boardman Labyrinth—Crest Spillway, 341
- Cassis, Juan H.
Optimum Design of Trusses with Buckling Constraints, 568
- Castel, David
see Seymour, Richard J., 784, 794
- Castro, Gonzalo
Re-Examination of Slide of Lower San Fernando Dam, 294
see Poulos, Steve J., 275
- Cavanagh, Terry
see Moehle, Jack P., 602
- Cekirge, Murat H.
see Tumay, Mehmet T., 246
- Cervero, Robert
A Tale of Two Cities: Light Rail Transit in Canada, 715
- Chace, Kenneth A.
see Benson, Ronald E., Jr., 77
- Chadda, Himmat S.
Are Pedestrians Safe at Right-On-Red Intersections?, 668
- Safe Conversations of Unwarranted Multi-Way Stop Signs, 707
- Speed (Road) Bumps: Issues and Opinions, 699
- Chakrabarti, A.
Hydrodynamic Pressure on a Dam During Earthquakes, 216
- Chakrabarti, S. K.
see Bjorhovde, Reidar, 513
- Chakrabarti, Subrata K.
Hydrodynamic Coefficients and Depth Parameter, 766
- Chakrabarti, Pulak C.
see Marmoush, Yehia R., 183
- Chan, Yupo
Estimating Recreational Travel and Economic Values of State Parks, 724
- Chandler, Henry W.
see Benson, Ronald E., Jr., 77
- Chang, Ching S.
Uncertainty of One-Dimensional Consolidation Analysis, 312
- Chang, Howard H.
Channel Width Adjustment During Scour and Fill, 402
Design of Stable Alluvial Canals in a System, 415
Formation of Alternate Bars, 406
River Morphology and Thresholds, 347

- Water and Sediment Routing Through Curved Channels, 356
- Chang, Luh-Maan**
Evaluation of Craftsman Questionnaire, 48
- Chang, Peter C.**
Analytical Modeling of Tube-In-Tube Structure, 552
- Chang, Rong**
see Haroun, Medhat A., 825
- Chang, Shou-Yuh**
Generating Designs for Wastewater Systems, 92
see Huang, Ju-Chang, 71
- Changnon, Stanley A.**
Research Agenda for Floods to Solve Policy Failure, 729
- Chaplin, John R.**
Morison Inertia Coefficients in Orbital Flow, 772
- Char, A. N. R.**
see Chaudhari, A. P., 307
- Charbeneau, Randall J.**
see Wirojanagud, Prakob, 342
- Chatterjee, Arun**
Innovative Strategies to Improve Urban Transportation Performance, 990
- Chaturvedi, M. C.**
Irrigation System Study in International Basin, 734
- Chaubé, U. C.**
see Chaturvedi, M. C., 734
- Chaudhari, A. P.**
Flexural Behavior of Reinforced Soil Beams, 307
- Chaudhry, M. Hanif**
Analysis and Stability of Closed Surge Tanks, 383
- Chavez-Morales, Jesus**
see Holzapfel, Eduardo A., 439
- Chawla, Amrik S.**
Average Uplift Computations for Hollow Gravity Dams, 344
- Chen, Albert T. F.**
Transmitting Boundaries and Seismic Response, 244
- Chen, Carl W.**
Effect of Ambient Air Quality on Throughfall Acidity, 72
- Chen, En-Sheng**
Constitutive Model for Concrete in Cyclic Compression, 173
- Chen, Jer-Shi**
Appropriate Forms in Nonlinear Analysis, 201
- Chen, W. F.**
see Liu, X. L., 10
- Chen, Wai Fah**
see Liu, Xila, 535
- Chen, Wai-Fah, ed.**
Connection Flexibility and Steel Frames, 965
- Chen, Wai-Fah**
- see** Sugimoto, H., 593
- see** Zhou, Shi-Ping, 637
- Chen, Yung Hai**
Salt River Channelization Project: Model Study, 333
- Cheng, Edmond D. H.**
Extreme Winds Simulated from Short-Period Records, 474
- Cheong, Hin-Fatt**
Gravimetric Statistics of Riprap Quarystones, 797
- Chern, Jenn-Chuan**
see Bazant, Zdenek P., 130, 149
- Chern, Jing C.**
see Valid, Voginder P., 301
- Chi, Nai-Yuan**
see Rounds, Jerald L., 26
- Chi, W. K.**
see Voyiadjis, G. Z., 195
- Chien, Chi-Hui**
Effective Length of a Fractured Wire in Wire Rope, 182
- Chin, David A.**
Model of Dispersion in Coastal Waters, 316
- Outfall Dilution: The Role of a Far-Field Model, 80
- Time Series Modeling of Coastal Currents, 822
- Chiu, Arthur N. L.**
see Nakamoto, Reginald T., 616
- see* Cheng, Edmond D. H., 474
- Chiu, Chao-Lin**
see Mizumura, Kazumasa, 327
- Cho, Kyo Zong**
see Barker, Donald B., 162
- Cho, Woncheol C.**
see Yeh, Gour-Tsyh, 350
- Choi, Chang-Koon**
Multistory Frames Under Sequential Gravity Loads, 620
- Choi, Y. K.**
see Mesri, Ghilamreza, 259
- Chopra, Anil K.**
Simplified Earthquake Analysis of Structures with Foundation Uplift, 527
- see* Fenves, Gregory, 168, 169, 505
- see* Yim, Solomon C.-S., 641
- Chou, Gee David**
see Vallabhan, C. V. Girija, 623
- Chou, Karen C.**
Nonlinear Response to Sustained Load Processes, 478
- Chow, Fong-Yen**
see Narayanan, Rangachari, 480
- Chow, Y. K.**
Torsional Response of Piles in Nonhomogeneous Soil, 285
- Christensen, G. Lee**

AUTHOR INDEX

Cowan

- Specific Resistance Measurements: Nonparabolic Data, 64
- Specific Resistance Measurements: Methods and Procedures, 65
- Christodoulou, George C.
- Brink Depth in Non-Aerated Overfalls, 445
- Chrysos, Lefteris
- see Papadakakis, Manolis, 546
- Chu, Kuang-Han
- Impact in Truss Bridge Due to Freight Trains, 135
- Chu, Vincent H.
- Oblique Turbulent Jets in a Crossflow, 211
- Chung, Ilwan
- Modeling the California State Water Project, 731
- Chung, Riley M.
- see Seed, H. Bolton, 313
- Church, Richard L.
- see Huber, Dennis L., 676
- Clark, Delores, ed.
- see Magoun, Orville T., ed., 961
- Clark, Mark M.
- A Critique of Camp and Stein's RMS Velocity Gradient, 96
- Clark, Robert M.
- Simulating Cost and Quality in Water Distribution, 755
- see Males, Richard M., 329
- Clemence, Samuel P., ed.
- Uplift Behavior of Anchor Foundations in Soil, 1022
- Clesceri, Nicholas L.
- see Chen, Carl W., 72
- Clough, G. Wayne
- Finite Element Analyses of Lock and Dam 26 Cofferdam, 263
- see Finno, Richard J., 243
- Clough, Ray W.
- see Popov, Egor P., 611
- Coe, James Q.
- see Sabet, M. Hosseini, 740
- Cofie, Nathaniel G.
- Uniaxial Cyclic Stress-Strain Behavior of Structural Steel, 193
- Cohn, Louis F.
- see Harris, Roswell A., 722
- Coker, G. Bülent
- An Information System for Building Products, 47
- Cole, Anne I.
- Conditioning of Anaerobically Digested Sludge, 82
- Cole, Charles A.
- see Bhatt, Nishith R., 738
- Collins, Michael R.
- Removal of Organic Matter in Water Treatment, 103
- Colony, David C.
- Considering the Future in Public Works Planning, 109
- Overview of Skid Resistance on Ohio Pavements, 709
- Committee on Engineering Surveying of the Surveying Engineering Division
- Definition of the Term "Engineering Surveying", 663
- Committee on Engineering Surveying of the Surveying Engineering Division of the American Society of Civil Engineers
- Engineering Surveying Manual, 979
- Committee on Forensic Engineering of the American Society of Civil Engineers
- Reducing Failures of Engineered Facilities, 1004
- Committee on Traffic Operations of the Urban Transportation Division
- Selected Bibliography on Traffic Operations, 682
- Conejo, Joao G. L.
- see Braga, Benedito P. F., Jr., 741
- Connell, Francis J.
- Accounting for CADD Center Costs, 934
- Constantinou, Michalakis C.
- Hysteretic Dampers in Base Isolation: Random Approach, 515
- Optimum Characteristics of Isolated Structures, 642
- Converse, Hugh, ed.
- see Magoun, Orville T., ed., 961
- Cook, Nevis E., Jr.
- Load History Effects on Structural Members, 510
- Cooke, J. Barry, ed.
- Concrete Face Rockfill Dams—Design, Construction, and Performance, 964
- Cooper, Ian
- see O'Rourke, Tom D., 949
- Corbitt, Robert A.
- Auditors Eye the Environment, 858
- Cording, Edward J.
- see Hansmire, William H., 305
- Cornel, Peter
- see Roberts, Paul V., 106
- Cornell, C. Allin
- see Winterstein, Steven R., 133
- Cornell, Holly A., ed.
- see Fox, Arthur J., Jr., ed., 1002
- Corniere, Miguel A.
- Distribution of Maximum Wave Height, 768
- Corotis, R.
- see Yao, James T. P., ed., 1018
- Corotis, Ross B.
- see Chou, Karen C., 478
- see Lin, Tzyy Shan, 551
- Costello, George A.
- see Chien, Chi-Hui, 182
- Cowan, Brent
- see Stover, Enos L., 856

- Cowherd, Chatten, Jr.**
see Lane, Dennis D., 60
- Cox, William E.**
see Dixon, W. Douglass, 735
- Craver, W., Jr.**
LOGO as an Introduction to FORTRAN Programming, 121
- Critea, Ronald W.**
Nitrogen Removal in Rapid Infiltration Systems, 104
- Cross, Seward E.**
see Chadda, Himmat S., 699
- Crouse, C. B.**
Experimental Foundation Impedance Functions, 277
- Cullinane, M. John, Jr.**
Waste Cleanup: Lessons Learned, 877
- Cullings, Clifford D.**
Information Systems in Surveying, 648
- Curphrey, Donald P.**
Rating Pavements by Computer, 933
- Curtis, James O.**
see Briassoulis, Demetris, 555
- Cuscino, Thomas**
see Lane, Dennis D., 60
- Dafalias, Yannis F.**
see Yang, Bing-Lin, 147
- Dallis, W. Alex**
see Kerr, Arnold D., 670
- Dandy, Graeme C.**
Pricing and Expansion of a Water Supply System, 727
- Daniel, David E.**
Cay Clay Liners Work?, 860
see Boynton, Stephen S., 260
- Darvall, Peter LeP.**
Elastic-Plastic-Softening Analysis of Plane Frames, 525
- Stiffness Matrix for Elastic-Softening Beams, 499**
- Datta, Subhendu K.**
see Wong, Ken C., 139
- Davies, Trevor G.**
Dynamic Behavior of Pile Groups in Inhomogeneous Soil, 309
see Sebaaly, Boutros, 714
- Davis, Edward C.**
Water Division at Low-Level Waste Disposal Sites, 95
- Davison, John W.**
see Roche, W. Martin, 912
- Davister, M. D.**
see Britvec, S. J., 143
- Dawe, J. L.**
Inelastic Buckling of Steel Plates, 475

- Dawe, John L.**
Local Buckling of Hollow Structural Sections, 540
Local Buckling of W Shape Columns and Beams, 8
Plate Instability for W Shapes, 7
- Dawson, Paul R.**
State Variable Model for Volumetric Creep of Clay, 129
- Day, Gerald N.**
Extended Streamflow Forecasting Using NWSRFS, 736
- Day, Steven R.**
Hydraulic Conductivity of Two Prototype Clay Liners, 286
- de Vries, Frits**
see Volkart, Peter U., 434
- Dean, Donald L.**
A Moment of Inertia Invariant, 587
- Dean, Robert G.**
see Perlin, Marc, 769
- Deb, Arun K.**
see Walski, Thomas M., 61
- DebChaudhury, Amitabha**
Periodic Response of Yielding Oscillators, 184
- Dede, Abel D. I.**
see Neumann, Edward S., 716
- Degner, Janet D.**
see Ruth, Byron E., 943
- Del Re, Robert, ed.**
The Role of the Resident Engineer, 1009
- Delleur, Jacques W.**
see Loganathan, Vasudevan G., 751
- Demetracopoulos, Alexander C.**
Design Considerations for a Novel Landfill Liner, 84
- Demetsky, Michael J.**
see Page, John H., 717
- Demand, Avery H.**
Leaching of Tetrachloroethylene from Vinyl-Lined Pipe, 49
- Dempsey, B. J.**
see Prapaharan, S., 296
- den Boer, K.**
Damage to Armor Units: Model Technique, 813
- Der Kiureghian, Armen**
see Igusa, Takeru, 127, 128
- Der-Avanesian, Norine Gara-Verni**
see Narayanan, Rangachari, 519
- Dermisis, Vassilios**
Dominant Shear Stresses in Arrested Saline Wedges, 807
- Desai, C. S.**
Cyclic Testing and Modeling of Interfaces, 276
- DeWolf, John T.**
see Veillette, John R., 534

AUTHOR INDEX

Emanuel

- Dezi, Luigino
Nonuniform Bending-Stress Distribution (Shear Lag), 639
- Dhanasekar, M.
Biaxial Stress-Strain Relations for Brick Masonry, 539
- Di Paola, Mario
Response Maxima of a SDOF System under Seismic Action, 598
- Dick, Richard I.
see Christensen, G. Lee, 64, 65
- Dickin, Edward A.
Evaluation of Design Methods for Vertical Anchor Plates, 262
- Diebold, John W.
see Moehle, Jack P., 605
- Diekmann, James E.
Construction Claims: Frequency and Severity, 22
- Diez, J. Javier
see Medina, Josep R., 800
- Dinchak, William G., ed.
Water Quality Issues at Fossil Fuel Plants, 1024
- DiVitro, Philip V.
Micro-CAD Systems: A Dream Come True, 880
- Dixon, W. Douglass
Instream Flow Protection in Riparian States, 735
- Dobry, Ricardo
see Gazetas, George, 5, 274
- Dorris, Virginia K.
Restoring the Capitol's West Front, 917
- Dow, John O.
Generalized Finite Element Evaluation Procedure, 497
- Dowding, C. H., ed.
Rock Masses: Modeling of Underground Openings/Probability of Slope Failure/Fracture of Intact Rock, 1008
- Driskell, Les
see Rahmeyer, William, 695
- Drumm, E. C.
see Desai, C. S., 276
- Dunnigan, Lorn P.
see Sherard, James L., 9
- Duranni, Tariq S.
see Easson, William J., 816
- Dwarakanathan, G. I.
see Niyogi, Sanat K., 503
- Dyhouse, Gary B.
Stage Frequency Analysis at a Major River Junction, 351
- Easa, Said M.
Optimization Model for Aggregate Blending, 34
Stochastic Priority Model for Aggregate Blending, 43
- Easson, William J.
- Force Spectra from Partially Submerged Circular Cylinders in Random Seas, 816
- Ebersole, Bruce A.
Refraction-Diffraction Model for Linear Water Waves, 821
- Echezuria, Heriberto
see Kavazanjian, Edward, Jr., 237
- Edge, Billy L., ed.
Nineteenth Coastal Engineering Conference: Proceedings of the International Conference, 997
- Effler, Steve W.
Attenuation Versus Transparency, 78
- Effler, Steven W.
Impact of Lake Acidification on Stratification, 101
see Martin, Scott C., 91
- Eisenberg, Don
see Olivieri, Adam, 749
- Eisenberg, Don M.
Ground-Water Protection in San Francisco Bay Area, 76
- Eisenberg, Y.
see Murphy, G. J., 952
- Eisenberger, Moshe
Stability of Plane Frames Omitting Axial Strains, 612
- Elgabry, Adel A.
see Dawe, John L., 540
- Elgamal, Ahmed-Waeil M.
see Prevost, Jean-Herve, 167
- Elias, Z. M.
Buckling with Enforced Axis of Twist, 224
- El-Jabir, Nassir
see Ouellette, Pierre, 756
- Ellaithy, Hamdy M.
see Haroun, Medhat A., 134, 664
- Ellen, C. H.
Theory for Thermally Induced Roof Noise, 615
- Ellingwood, Bruce
Limit States Criteria for Masonry Construction, 476
see Tallin, Andrew, 608
- Elliott, Keith R.
Effect of Pier Spacing on Scour Around Bridge Piers, 385
- Ellis, J. H.
Deterministic Linear Programming Model for Acid Rain Abatement, 56
- Stochastic Optimization/Simulation of Centralized Liquid Industrial Waste Treatment, 100
- El-Sebakhy, Ibrahim S.
see Kennedy, John B., 585
- Emad, Kayumars
Shallow Trenches and Propagation of Surface Waves, 142
- Emanuel, Jack H.
Length-Thermal Stress Relations for Composite Bridges, 520

- Endy, Elizabeth M.**
Ethics in the Field, 954
- Ermopoulos, John C.**
Stability of Frames with Tapered Built-up Members, 594
- Esparza, Edward D.**
Trench Effects on Blast-Induced Pipeline Stresses, 299
- Ettema, Robert**
see Raudkivi, Arved J., 360
- Everett, Jess**
Bound Glass in Shredded Municipal Solid Waste, 233
- Everts, Craig H.**
Sea Level Rise Effects on Shoreline Position, 824
- Faggiano, Paolo**
see Zavelani, Adolfo, 624
- Fairweather, Virginia**
Building in Space, 884
Clearing the Decks, 922
Engineering Education: An Update, 904
The Pursuit of Quality: QA/QC, 848
see Godfrey, K. A., Jr., 833
see Zeitlin, Lev, 910
- Fanella, D.**
Continuum Damage Mechanics of Fiber Reinforced Concrete, 185
- Fangmeier, D. D.**
see Yitayew, Muluneh, 426
- Farber, Kurt**
see Bechteler, Wilhelm, 319
- Farid, Foad**
Fair and Reasonable Markup (FaRM) Pricing Model, 44
- Farquhar, G. J.**
see Ellis, J. H., 56, 100
- Fattah, Qais N.**
Dispersion in Anisotropic, Homogeneous, Porous Media, 365
- Faust, Charles R.**
see Mercer, James W., 16
- Feng, Chuan C.**
see Qin, Bosheng, 630
- Fenton, John**
A Fifth-Order Stokes Theory for Steady Waves, 773
- Fenton, John D.**
Wave Forces on Vertical Walls, 805
- Fenves, Gregory**
Reservoir Bottom Absorption Effects in Earthquake Response of Concrete Gravity Dams, 505
Simplified Earthquake Analysis of Concrete Gravity Dams: Combined Hydrodynamic and Foundation Interaction Effects, 168
Simplified Earthquake Analysis of Concrete Gravity Dams: Separate Hydrodynamic and Foundation Interaction Effects, 169
- Fessehaye, M.**
see Liu, H., 374
- Figueroa, Ludwig**
Inverted Shear Modulus from Wave-Induced Soil Motion, 240
- Finn, Richard J.**
Evaluation of Soil Response to EPB Shield Tunneling, 243
- Fisher, John**
see Koehn, Enno, 114
- Fisher, John W.**
Hundreds of Bridges—Thousands of Cracks, 865
- Fiazat, Abbas A.**
see Chen, Yung Hai, 333
- Flaxman, E. W.**
see O'Rourke, Tom D., 949
- Flick, Reinhard E.**
see Zetler, Bernard D., 809
- Fogler, H. Scott**
see Khilar, Kartic C., 278
- Ford, David T.**
see Sabet, M. Hossein, 740
- Forde, Bruce**
Steel Construction Evaluation by MLR-Strategies, 29
- Foschi, Ricardo O.**
Wood Floor Behavior: Experimental Study, 628
- Fowler, David W.**
see Nelson, Erik L., 512
- Fowler, Jack**
Building on Muck, 875
- Fowler, John E.**
see Chaudhry, M. Hanif, 383
- Fox, Arthur J., Jr., ed.**
Quality in the Constructed Project, 1002
- France, John W.**
see Poulos, Steve J., 275
- Frangopol, Dan M.**
Sensitivity of Reliability-Based Optimum Design, 577
Structural Optimization Using Reliability Concepts, 614
- Frank, Andrew U.**
Distributed Data Bases for Surveying, 656
- Frantz, Gregory C.**
see Hsiung, Wayne, 492
- Fredsoe, Jorgen**
Distribution of Suspended Sediment in Large Waves, 828
- Freehling, Dan J.**
Use of Computerized Databases in Legal Research, 650
- Frenette, Marcel**
see Julien, Pierre Y., 400
- Fricker, Jon D.**

AUTHOR INDEX

Gonzales

- Urban Transportation Impacts of Tall Buildings, 698
Fronek, Donald K.
see Curphey, Donald P., 933
Fu, Chung C.
see Krayterman, Boris L., 622
Fukumoto, Yuhshi
Local Instability Tests of Plate Elements under Cyclic Uniaxial Loading, 537
see Nishida, Susumu, 550
see Sugura, Kunitomo, 178
Fuller, E. R., Jr.
see Reed, D. A., 560
Fung, L.
see Masliyah, Jacob H., 372
Furth, Peter G.
Vehicle Pooling in Transit Operations, 689
see Simon, Jesse, 712
Futrell, Glenn E.
What Do You Look for in a New Engineer?, 448
Gaboury, David R.
see Bras, Rafael L., 362
Gabriel, David
see Hedges, Terence S., 776
Gallagher, Margaret A.
see Ircha, Michael C., 719
Galloway, Patricia
see Nielson, Kris R., 939
Gardner, Christopher A.
see Cassidy, John J., 341
Garg, Vijay K.
see Chu, Kuang-Han, 135
Garga, Vinod K.
Compaction Characteristics of River Terrace Gravels, 288
Garland, Enrique
see Briaud, Jean-Louis, 252
Garrett, David C., III.
see Corbitt, Robert A., 858
Garrison, C. J.
Comments on Cross-Flow Principle and Morison's Equation, 830
Gates, William E.
see Males, Richard M., 329
Gaylord, Edwin H.
Transmission Towers: Design of Cold-Formed Angles, 584
Gazetas, George
Horizontal Response of Piles in Layered Soils, 5
Vertical Response of Arbitrarily Shaped Embedded Foundations, 274
Gazetas, George, ed.
Vibration Problems in Geotechnical Engineering, 1023
Geekie, R. F.
see Liu, H., 374
Geoola, Farhad
see Bokaian, Alireza, 132, 160
Georgiadis, Michael
Bearing Capacity of Gravity Bases on Layered Soil, 272
Gerstle, Kurt H.
see Cook, Nevis E., Jr., 510
Gesund, Hans
Flexural Limit Design of Column Footings, 613
Ghaboussi, J.
see Pecknold, D. A., 179
Ghali, Amin
Partially Prestressed Concrete Structures, 586
Ghassemi, Masood
Hazardous Waste Surface Impoundment Technology, 88
Gherini, Steven A.
see Chen, Carl W., 72
Ghosn, Michel
Markov Renewal Model for Maximum Bridge Loading, 192
Gilbert, Richard O.
see Zirschky, J., 98
Gilchrist, James M.
Load Tests on Tubular Piles in Coralline Strata, 268
Gimenez-Curto, Luis A.
see Corniere, Miguel A., 768
Ginsburg, Shlomo
see Pesquera, Carlos I., 645
Gnilsen, Reinhard
Slashing Tunnel Costs, 936
Goble, George G.
see Rausche, Frank, 255
Godbole, Pramod N.
see Asawa, Girdhari, L., 359
Godfrey, K. A.
Management Secrets of Top Consultants, 905
Godfrey, K. A., Jr.
Data Base in Your City's Future?, 935
High Strength Steel, 870
Managing Public Works: How the Best Do It, 833
Municipal Refuse: Is Burning Best?, 862
Rationalizing Land Records, Mapping, Planning, 845
Tampa Does It with Mirrors, 947
Godin, Gabriel
Modification of River's Tide by Its Discharge, 775
Goel, Subhash C.
see Astaneh-Asl, Abolhassan, 542
Goldstein, Robert A.
see Chen, Carl W., 72
Gonzales, Hugo
see Wilson, Frank R., 680

- Gooch, Thomas C.**
see Wood, Duncan W., 753
- Goodman, Alvin S.**
see Gupta, Ram S., 746
- Goodwin, Richard W.**
Auto-Oxidation Effect on Flue Gas Sludge Systems, 227
- Gorbonos, Victor**
see Eisenberger, Moshe, 612
- Gorji, Manouchehr**
Nonlinear Analysis of Plates with Plastic Orthotropy, 609
- Gould, Phillip L.**
Linear Stress Analysis of Torospherical Head, 207
see Lee, Bor-Jen, 591
- Gowda, T. P. Halappa**
Volatilization Rates of Organic Chemicals of Public Health Concern, 97
- Grace, Nabil F.**
Dynamic Analysis of Orthotropic Plate Structures, 187
- Graham, J.**
Comparison of Natural and Remolded Plastic Clay, 280
- Graves Smith, Tom R.**
see Ishac, Ishac I., 617
- Gray, Donald H.**
see Khilar, Kartic C., 278
- Greathead, Clive A.**
see Easson, William J., 816
- Green, Roger**
see Branco, Fernando A., 507
- Greenberg, Maurice S.**
Design, Construction and Maintenance of Torrijos Airport, 681
- Greene, William H.**
Minimum Weight Sizing of Guyed Antenna Towers, 603
- Greenstein, Jacob**
Use of NDT and Pocket Computers in Pavement Evaluation, 688
- Greimann, Lowell F.**
see Yang, Pe-Shen, 235
- Grenney, William J.**
Suspended Sediment—River Flow Analysis, 99
- Grigg, Neil S.**
Research Needs for Infrastructure Management, 723
- Grimm, Clayford T.**
Flexural Strength of Masonry Prisms versus Wall Panels, 597
- Grimm, Dan**
Foam Grout Saves Tunnel, 924
- Grivas, Dimitri**
see Harrop-Williams, Kingsley O., 258
- Grondin, G. Y.**
see Dawe, J. L., 475
- Grondin, Gilbert Y.**
see Dawe, John L., 540
- Grosch, Chester E.**
see Oh, Im Sang, 763
- Grossman, Donald S.**
see Bras, Rafael L., 362
- Gründig, Lothar**
Detection and Localization of Geometrical Movements, 659
- Gu, Y. Z.**
see Shen, C. K., 287
- Guarnieri, Giuseppe**
Collapse of Plate Girders with Inclined Stiffeners, 494
- Guell, David L.**
Comparison of Two Rigid Pavement Design Methods, 713
- Gupta, Ajaya K.**
Behavior of Wood-Framed Shear Walls, 578
- Gupta, Arvind K.**
Vibration of Tapered Beams, 471
- Gupta, Ashim Das**
Characteristics of Free Surface Flow Over a Gravel Bed, 438
- Gupta, B. R. N.**
Nomogram for Velocities of Partial Flows in Sewers, 62
- Gupta, Ram S.**
Ground-Water Reservoir Operation for Drought Management, 746
- Gupta, S. K.**
Nitrogenous Wastewater Treatment by Activated Algae, 53
- Gutierrez, Roberto H.**
see Laura, Patricio A. A., 199
- Guza, R. T.**
Velocity Moments in Nearshore, 774
- Haaijer, Geerhard**
Advances in Short Span Steel Bridges, 938
- Haas, Charles N.**
Revegetation Using Coal Ash Mixtures, 85
- Hadjipriono, Fabian C.**
Analysis of Events in Recent Structural Failures, 561
- Hadj-Hamou, Tarik**
Seismic Stability of Gentle Infinite Slopes, 270
- Hadjipanagos, Panos**
see Wormleaton, Peter Richard, 338
- Hager, W. H.**
Flood Storage in Reservoirs, 418
Modified Venturi Channel, 414
- Hager, Willi H.**
B-Jumps at Abrupt Channel Drops, 368
Equations for Plane, Moderately Curved Open

AUTHOR INDEX

Helou

- Channel Flows, 349
Head-Discharge Relation for Vortex Shaft, 379
Hagerty, D. Joseph
see Springer, Floyd M., Jr., 267
Haldar, Achintya
see Ayyub, Bilal M., 42
Hallermeier, Robert J.
Entrained and Bed-Load Sand Concentrations in Waves, 796
Hambly, Edmund C.
Punch-Through Instability of Jack-Up on Seabed, 264
Hamilton, David A.
Field Comparison of Three Mass Transport Models, 315
Hancher, Donn E.
Productivity of Construction Professionals, 449
Hancock, Gregory J.
Distortional Buckling of Steel Storage Rack Columns, 644
Handy, Richard L.
The Arch in Soil Arching, 251
Hannoura, A'Alim A.
Rubble Mounds: Hydraulic Conductivity Equation, 811
Rubble Mounds: Numerical Modeling of Wave Motion, 812
Hansen, Kenneth D., ed.
Roller Compacted Concrete, 1010
Hansmire, William H.
Soil Tunnel Test Section: Case History Summary, 305
see Abbott, Eldon L., 948
Hanson, Hans
Seawall Constraint in the Shoreline Numerical Model, 831
Hanson, Robert D.
see Astaneh-Asl, Abolhassan, 542
Haque, Muhammad I.
Geometry of Ripples and Dunes, 318
Harajli, M. H.
Static and Fatigue Tests on Partially Prestressed Beams, 570
Harder, L. F.
see Seed, H. Bolton, 313
Hardin, Bobby O.
Crushing of Soil Particles, 298
Hargreaves, G. Leo
Agricultural Benefits for Senegal River Basin, 422
Irrigation Water Requirements for Senegal River Basin, 435
Hargreaves, George H.
see Hargreaves, G. Leo, 422, 435
Hargroves, Bradley T.
Ranking Low Guardrail Sites for Remedial Treatment, 708
Harik, Issam E.
Curved Bridge Decks: Analytical Strip Solution, 564
Haro, Michael
see Ghazemi, Masood, 88
Haroun, Medhat A.
Axisymmetrical Vibrations of Tanks—Numerical, 145
Axisymmetrical Vibrations of Tanks—Analytical, 146
Internal Seismic Forces on Submerged Oil Tanks, 825
Model for Flexible Tanks Undergoing Rocking, 134
Seismically Induced Fluid Forces on Elevated Tanks, 664
Harris, Roswell A.
Use of Vegetation for Abatement of Highway Traffic Noise, 722
Harris, Steven C.
Small Water Users—Planning Crisis, 916
Harrop-Williams, Kingsley
Clay Liner Permeability: Evaluation and Variation, 300
Harrop-Williams, Kingsley O.
Interference Between Geotechnical Structures, 258
Hartigan, John P.
Reservoir Modeling to Develop AWT Nitrate Standard, 12
Hasebe, Kaoru
Shear Lag Analysis and Effective Width of Curved Girder Bridges, 131
Hassan, N. M. K. Nik
Local Scour Downstream of an Apron, 403
Haston, Jack S., ed.
Developments in New and Existing Materials, 973
Hawkins, Neil M.
see Barker, Donald B., 162
Hawkins, Richard H.
Runoff Probability, Storm Depth, and Curve Numbers, 440
Hayashi, Masachika
see Makigami, Yasuji, 697
Hayashikawa, Toshiro
Free Vibration Analysis of Continuous Beams, 163
He, Yunlin
Effective Length of Columns in Steel Radial Gates, 621
Healey, T. J.
see Pecknold, D. A., 179
Hedges, Terence S.
Interaction of Random Waves and Currents, 776
Heinen, Richard
Who Should Design Bridges?, 903
Helou, Amin H.
Dynamics of Internal Waves in Cylindrical Tank, 788

- Helweg, Otto**
see Chung, Ilwhan, 731
- Hemakom, Roongroj**
see Burns, Ned H., 589
- Hemphill, F.**
see Masliyah, Jacob H., 372
- Hendrickson, C.**
see McGartland, M., 39
- Hendrickson, Chris**
Private versus Public Ownership of Constructed Facilities, 458
see Chatterjee, Arun, 990
- Hendrickson, Erik M.**
see Simiu, Emil, 529
- Heney, Joseph E.**
Specialization as a Strategy for Growth, 464
- Herrmann, Leonard R.**
see Yang, Bing-Lin, 147
- Heyse, Edward**
see Grenney, William J., 99
- Highter, William H.**
Dimensioning Footings Subjected to Eccentric Loads, 269
- Hill, Robert W.**
see Angeles, Honorato L., 425
- Hilmy, Said**
see Perdikaris, Philip C., 501
- Hinwood, Jon B.**
Initial Dilution for Outfall Parallel to Current, 366
- Hinze, Jimmie**
Absenteeism in Construction Industry, 465
- Hjelmfelt, A. T., Jr.**
Negative Outflows from Muskingum Flood Routing, 378
- Hjelmfelt, Allen T., Jr.**
see Hawkins, Richard H., 440
- Ho, Thomas H.**
see Dow, John O., 497
- Hoffman, Glenn J.**
Drainage Required to Manage Salinity, 429
- Holland, James P.**
Professional Liability of the Architect and Engineer, 115
- Holloway, Lee J.**
see Johnson, Edgar B., 946
- Holloway, Greg**
see Murty, Tad S., 780
- Holm, T. A.**
see Stoll, R. D., 290
- Holzapfel, Eduardo A.**
Procedure to Select an Optimum Irrigation Method, 439
- Hoopes, John A.**
- see Fattah, Qais N.**, 365
- Horie, Yasushi**
see Hasebe, Kaoru, 131
- Hosain, M. U.**
see Kullman, Rick B., 473
- Hoshina, Hiroshi**
see Nomura, Yoshihiko, 28
- Hoskins, James M.**
see Sun, Chang-Ning, 669
- Hott, James L.**
USGS Telecommunications Responding to Change, 649
- Houck, Mark H.**
see Can, Emre K., 750
- Houston, Sandra L.**
Thermo-Mechanical Behavior of Seafloor Sediments, 302
- Houston, William N.**
see Houston, Sandra L., 302
- Howe, John**
see Reinato, Robert J., 423
- Howland, James C.**
A Gradualist's Approach to Management, 459
- Hoyle, Robert J., Jr.**
see Bessette, Allan E., 477
- Hribar, John P.**
Development of an Engineering Manager, 450
- Hsiung, Wayne**
Elements of Cost and Schedule Management, 460
- Hsu, Cheng-Tzu Thomas**
Biaxially Loaded L-Shaped Reinforced Concrete Columns, 633
- Hu, Chun-Nong**
China Builds Record Bridge, 847
- Hu, Po-Wen**
see Craver, W., Jr., 121
- Huang, Edward Tieh-Yeu**
Residential Real Estate Development in Saudi Arabia, 721
- Huang, Jingxiang**
Stability of Dynamic Flood Routing Schemes, 412
- Huang, Ju-Chang**
Biofilm Growth with Sucrose as Substrate, 71
- Huang, Min-Chih**
FEM Solution of 3-D Wave Interference Problems, 803
- Huang, Tseng**
Wave Interference Effects by Finite Element Method, 758
- see Chen, Jer-Shi**, 201
- see He, Yunlin**, 621
- Hubbard, Larry**
see Hinze, Jimmie, 465

AUTHOR INDEX

Jordaan

- Hubbell, David W.**
New Approach to Calibrating Bed Load Samplers, 358
- Huber, Dennis L.**
Transmission Corridor Location Modeling, 676
- Huber, Timothy R.**
see Mitchell, James K., 247
- Hudspeth, Robert T.**
see Huang, Min-Chih, 758, 803
see Tuah, Hang, 785
- Hughes, Steven A.**
see Vincent, Charles L., 810
- Humpherys, Allan S.**
Electronic Clocks for Timing Irrigation Advance, 420
- Hunt, R. Joe**
see Sun, Chang-Ning, 669
- Hutchinson, Bruce G.**
see Dandy, Graeme C., 727
- Hwang, Jack C.**
see Yeh, Gour-Tsyh, 350
- Hwang, Paul A.**
Fall Velocity of Particles in Oscillating Flow, 346
- Ibbs, C. William, Jr., ed.**
Construction Research Applied to Practice, 968
- Ibbs, C. William, Jr.**
Product Specification Practices and Problems, 30
- Igusa, Takeru**
Dynamic Characterization of Two-Degree-of-Freedom Equipment-Structure Systems, 127
- Dynamic Response of Multiply Supported Secondary Systems, 128
- Inada, Kunihiro**
see Inui, Taiji, 618
- Ikeda, Syunsuke**
Bed Topography in Bends of Sand-Silt Rivers, 405
- Ingles, Owen G.**
see Tadanier, Roman, 500
- Inui, Taiji**
Effects of Weld Configurations on Strain Field, 618
- Ionnides, Socrates A.**
Staggered Truss Adapted to High Rise, 878
- Ircha, Michael C.**
Urban Transit: Equity Aspects, 719
- Ishac, Ishac I.**
Approximations for Moments in Box Girders, 617
- Ishibashi, Isao**
Effect of Initial Shear on Cyclic Behavior of Sand, 311
see Matsuzawa, Hiroshi, 297
- Ishida, Shuze**
Collapse of SDOF System to Harmonic Excitation, 151
- Iwan, Wilfred D.**
- Vortex-Induced Oscillation of Structures in Water, 777**
- Iwasaki, Masata**
- Improvement of Congestion Detection on Expressways, 693
- Iway, Wilfred D.**
see Rashed, Ahmed A., 190
- Iyengar, Hal**
Mixing Steel and Concrete, 851
- Jacobs, Brian K.**
see Kobayashi, Nobuhisa, 795, 817
- Jafek, Bev**
Trouble in Our Own Back Yard, 841
- Jahn, Sheldon L.**
see Vinson, Ted S., 266
- Jain, Ashok K.**
Seismic Response of RC Frames with Steels Braces, 604
- Jain, Pramod Kumar**
Evapotranspiration Model for Semiarid Regions, 443
- Jain, R. K.**
see Nath, Y., 203
- Jeang, Fure-Lin**
see Barker, Donald B., 162
- Jeng, Y. S.**
Two Parameter Fracture Model for Concrete, 202
- Jerath, Sukhvarsh**
Buckling of Orthotropic Cylinders due to Wind Load, 161
- Jeyapalan, Jey K., ed.**
Advances in Underground Pipeline Engineering, 956
- Jiang, Zhang-Peng**
see Huang, Ju-Chang, 71
- Johnson, Edgar B.**
Unearthing Mt. Baker Tunnel, 946
- Johnson, Peter**
see Eisenberg, Don M., 76
- Johnson, William K.**
Significance of Location in Computing Flood Damage, 730
- Johnston, David C., ed.**
Managing Computers, 993
- Negotiation and Contract Management, 995
- Johnston, Ian W.**
Comparison of Two Strength Criteria for Intact Rock, 314
- Strength of Intact Geomechanical Materials, 273
- Jones, E. Bruce, ed.**
Watershed Management in the Eighties, 1025
- Jones, Harry L.**
Minimum Cost Prestressed Concrete Beam Design, 626
- Jordaan, Ian J.**

- see Nessim, Maher A., 554
- Jovanis, Paul P.**
see Moore, James E., 684
- Julien, Pierre Y.**
Modeling of Rainfall Erosion, 400
- Kagan, Harvey A.**
How Designers Can Avoid Construction Claims, 119
- Kamat, Manohar P., ed.**
Optimization Issues in the Design and Control of Large Space Structures, 999
- Kanagamudram, Subramaniam**
Maximum Strength Design of Structural Frames, 549
- Kang, Shin Jon**
see Seeley, John C., 842
- Kantha, Lakshmi, H.**
see Blumberg, Alan F., 331
- Kapaloski, Lee**
see Bagley, Jay M., 737
- Karasudhi, Pisidhi**
see Rajapakse, R. K. N. D., 196
- Kareem, A.**
Wind-Induced Response Analysis of Tension Leg Platforms, 472
- Kareem, Ahsan, ed.**
Hurricane Alicia: One Year Later, 986
- Kareem, Ahsan**
Lateral-Torsional Motion of Tall Buildings, 627
- Structural Performance and Wind Speed-Damage Correlation in Hurricane Alicia, 634
- Karihaloo, Bhushan L.**
see Kanagamudram, Subramaniam, 549
- Karr, Alan F.**
see Chou, Karen C., 478
- Karsan, D. I.**
see Kumar, A., 485
- Karsan, Demir I.**
see Krahl, Nat W., 526
- Katsikadelis, J. T.**
Torsion of Composite Bars by Boundary Element Method, 200
- Kavanagh, Donncha P.**
SIREN: A Repetitive Construction Simulation Model, 40
- Kavazanjian, Edward, Jr.**
Liquefaction Potential Mapping for San Francisco, 237
- see Hadj-Hamou, Tarik, 270
- Kawamura, Makoto**
see Ishibashi, Isao, 311
- Keary, G. Phil**
see Zirschky, J., 98
- Keegel, John C.**
see Kullback, S., 702
- Keller, Thomas O.**
see Poulos, Steve J., 310
- Kellie, Andrew C.**
The Surveyor and Written Boundary Agreements, 662
- Kelly, William E.**
Electrical Resistivity for Estimating Ground-Water Recharge, 427
- Kelly, William E., ed.**
see Volpe, Richard L., ed., 1011
- Kemp, Alan R.**
Interaction of Plastic Local and Lateral Buckling, 607
- Kennedy, John B.**
Collapse Loads of Continuous Orthotropic Bridges, 585
- Kennedy, John E.**
see Grace, Nabil F., 187
- Kerr, Arnold D.**
Blowup of Concrete Pavements, 670
- On the Determination of Foundation Model Parameters, 308
- Kessler, K. A.**
Foundation Densification for Fossil Plant Loads, 226
- Keyes, Conrad G., Jr., ed.**
Development and Management Aspects of Irrigation and Drainage Systems, 972
- Khaleel, Raz**
Miscible Displacement in Porous Media: MOC Solution, 416
- Khanna, P.**
see Kulkarni, Vijay S., 87
- Khilar, Kartic C.**
Model for Piping-Plugging in Earthen Structures, 278
- Khosla, Vijay, ed.**
Advances in the Art of Testing Soils Under Cyclic Conditions, 955
- Khudenko, Boris M.**
Development and Analysis of Equalization Basins, 107
- Killion, Mark E.**
Design Pressures in Circular Bins, 581
- Kim, Dae Woong**
see Lee, Kang W., 691
- Kim, E-Doo**
see Choi, Chang-Koon, 620
- Kim, Ju Won**
see Lee, Kang W., 691
- King, Paul H.**
see Collins, Michael R., 103
- Kiousis, P. K.**
Lagrangian Continuum Theory for Saturated Porous Media, 205
- Kippel, Edward A.**

AUTHOR INDEX

Kulak

- Research Needs Related to the Nation's Infrastructure, 1006
Kitipornchai, Sritawat
Design of Diagonal Roof Bracing Rods and Tubes, 538
Kjerbol, Georg
see Johnson, Edgar B., 946
Kleban, Eloise R.
KERMIT Protocol for Inter-Computer Data Transfer, 655
Kleeman, Peter W.
see Dhanasekar, M., 539
Kleiner, David E.
Engineering with Spreadsheets, 930
Kmita, Jerzy
Silo as a System of Self-Induced Vibration, 481
Knapp, Alpha E.
Offshore Platform Fatigue Cracking Probability, 573
Knelfati, Mahmoud C.
Analysis of Plates on a Kerr Foundation Model, 210
Knight, D. W.
Boundary Shear in Smooth Rectangular Ducts, 317
Kobayashi, Albert S.
see Barker, Donald B., 162
Kobayashi, Nobuhisa
Fluid and Sediment Interaction over a Plane Bed, 371
Riprap Stability Under Wave Action, 795
Stability of Armor Units on Composite Slopes, 817
Koehn, Enno
Climatic Effects on Construction, 27
Estimating Rural and Urban Infrastructure Needs, 114
Kohn, Robert F.
see Corbitt, Robert A., 858
Kolf, Richard C.
 Sewage-Related Wastes and Oceans: A Problem?, 126
Kolsky, H.
see Mosquera, J. M., 213
Konon, Walter
Vibration Criteria for Historic Buildings, 33
Koseff, J. R.
Circulation Structure in a Stratified Cavity Flow, 337
Koshi, Masaki
see Iwasaki, Masata, 693
Kosiba, Richard J.
Entering Technical Management, 461
Kosten, Celal N.
Checking Off CADD Priorities, 871
Kostyniuk, Lidia P.
see O'Day, James, 692
Kosut, Gary M.
Test of Four-Panel Post-Tensioned Flat Plate, 590
Kotsovov, Michael D.
see Bédard, Claude, 640
Kounadis, Anthony N.
see Ermopoulos, John C., 594
Koutsoutsas, Demetrious C.
Design Strengths for an Offshore Clay, 253
Kraft, Walter H., ed.
Rebuilding America: Infrastructure Rehabilitation, 1003
Krahl, Nat W.
Axial Strength of Grouted Pile-to-Sleeve Connections, 526
Krajcinovic, D.
see Fanella, D., 185
Krajcinovic, Dusan, ed.
see Stubbs, Norris, ed., 970
Kranenburg, C.
Leakage from Ruptured Submarine Oil Pipeline, 711
Mixed-Layer Deepening in Lakes after Wind Setup, 396
Kraus, Nicholas C.
see Hanson, Hans, 831
Krawinkel, Helmut
see Cofie, Nathaniel G., 193
see Ross, Timothy J., 574
Krayterman, Boris
Large Deflected Plates and Shells with Loading History, 164
Krayterman, Boris L.
Nonlinear Analysis of Clamped Circular Plates, 622
Kreitzberg, Fred C.
see O'Brien, James J., 25
Krieter, Dan Steven
see Ardit, David, 675
Krishna, P.
Effect of Cable Stiffness on Cable-Stayed Bridges, 596
Krishnappan, Bommanan G.
Modeling of Unsteady Flows in Alluvial Streams, 332
see Lau, Y. Lam, 373
Krizek, Raymond J.
Chemical Grouting in Soils Permeated by Water, 282
Krzewinski, Thomas G., ed.
Thermal Design Considerations in Frozen Ground Engineering, 1019
Kudlich, R. L.
see Shukla, J. H., 836
Kuesel, Thomas R.
Floating Bridge for 100 Year Storm, 883
Kulak, Geoffrey L.
see Dawe, John L., 7, 8

- Kulatilake, Pinnaduwa H. S. W.**
Estimating Elastic Constants and Strength of Discontinuous Rock, 279
- Kulhawy, Fred H.**
see Trautmann, Charles H., 292
- Kulkarni, Vijay S.**
Pumped Wastewater Collection Systems Optimization, 87
- Kullback, S.**
Red Turn Arrow: An Information Theoretic Evaluation, 702
- Kullman, Rick B.**
Shear Capacity of Stub-Girders: Full Scale Tests, 473
- Kumar, A.**
Stiffness Properties of Fixed and Guyed Platforms, 485
- Kumar, Akhilesh**
see Chawla, Amrik S., 344
- Kumar, Prabhat**
Static Infinite Element Formulation, 619
- Kuo, Albert Y.**
Dredge-Induced Turbidity Plume Model, 790
- Kuo, Pei-Hornig**
see Gupta, Ajaya K., 578
- Kuppusamy, Thangavelu**
see Clough, G. Wayne, 263
- Kuretski, J. J., Jr.**
see Kessler, K. A., 226
- Kurtovich, Martin**
Danger: Natural System Modeled by Computer, 908
see Olivieri, Adam, 749
- Kurtovich, Martin R.**
see Eisenberg, Don M., 76
- Kusama, Haruyuki**
see Fukumoto, Yuhshi, 537
- Kwan, K. H.**
see Liauw, T. C., 558
- Kyriakides, Stelios**
see Yun, Heedo, 140
- Lacy, Sara J.**
see Prevost, Jean H., 281
- Ladd, Charles C.**
see Koutsotfas, Demetrious C., 253
- Lagasse, Peter F.**
Erosion Risk Analysis for a Southwestern Arroyo, 720
- Lall, Bhagirath, ed.**
see Marks, George V., ed., 1000
- Lam, Tenny N.**
Estimating Fuel Consumption from Engine Size, 694
- Lambe, Philip C.**
Dynamic Centrifugal Modeling of a Horizontal Dry Sand Layer, 250
- Lamberti, H. V.**
Frame Moments with the Takabeya Method, 844
- Lane, Dennis D.**
Horizontal Elutriator Preliminary Test Results under Nonstill Air Conditions, 60
- Langner, Carl G.**
see Verner, Edward A., 704
- Larock, Bruce E.**
see Schoellhamer, David H., 384
- Larson, Dean T.**
see Bagley, Jay M., 737
- Latorre, Robert**
Shallow River Pushboat Preliminary Design, 804
- Lau, Y. Lam**
Sediment Transport under Ice Cover, 373
- Laufier, Alexander**
On Site Performance Improvement Programs, 23
- Laura, Patricio A. A.**
Vibrating Nonuniform Plates on Elastic Foundation, 199
- Lauson, Herrick S.**
see Dawson, Paul R., 129
- Lauwaert, Alan J.**
Water Quality and Regional Water Supply Planning, 742
- Le Mehaute, Bernard**
Wave Statistical Uncertainties and Design of Breakwater, 820
- Leach, Jamie W., ed.**
see Montgomery, Raymond L., ed., 975
- Leach, Patrick A.**
Hinged Floating Breakwater, 818
- Leathers, Francis D.**
see Castro, Gonzalo, 294
- Ledbetter, Bonnie S.**
Pioneering Construction Engineering Education, 20
- Lee, Bor-Jen**
Seismic Response of Pile Supported Cooling Towers, 591
- Lee, Ian Kenneth**
see Murti, Viriyawan, 138
- Lee, Joseph H. W.**
Experimental Measurement of Multiple-Jet Induced Flow, 191
- Lee, Joseph Hun-wei**
Comparison of Two River Diffuser Models, 382
- Lee, Kang W.**
Development of Color Pavement in Korea, 691
- Leick, Alfred**
Mathematical Models within Geodetic Frame, 658
- Lennon, Gerard P.**
Simulation of Two-Fluid Response in Vicinity of Recovery Wells, 390
- Wave-Induced Forces on Buried Pipeline, 792**

AUTHOR INDEX

Lund

- Lenocker, Tracy**
Micro-CAD: Can It Pay for Itself, 927
- Lenz, J. J.**
see Aggour, M. S., 231
- Lenz, Richard R.**
A Performance Review System, 453
- Leonard, John W.**
see Huang, Min-Chih, 758, 803
- Leschinsky, Dov**
Stability of Membrane Reinforced Slopes, 304
- Lesley, Kenneth**
Critical Human Technology Issues for Engineers, 466
- Letelier S., Mario F.**
Laminar Flow in Conduits of Unconventional Shape, 171
- Leung, Chun F.**
see Dickin, Edward A., 262
- Leutheusser, Hans J.**
see Letelier S., Mario F., 171
- Levi, Franco**
On Minimum Reinforcement in Concrete Structures, 646
- Levy, Robert**
Monotone Behavior of Trusses Under Two Loadings, 484
- Lewis, Barbara-Ann G.**
see Murray, Louis C., Jr., 93
- Li, C. W.**
see Lee, Joseph H. W., 191
- Li, E. C. C.**
see Graham, J., 280
- Li, X. S.**
see Shen, C. K., 287
- Liang, George C.**
see Crouse, C. B., 277
- Liao, Wen-Gen**
Hydrodynamic Interaction of Flexible Structures, 806
- Liauw, T. C.**
Unified Plastic Analysis for Infilled Frames, 558
- Liaw, Shu-Liang**
see Chang, Shou-Yuh, 92
- Libicki, Charles M.**
Computer Animation of Storm Surge Predictions, 334
- Libove, Charles**
Sparsely Connected Built-Up Columns, 509
- Liggett, J. A.**
see Taigbenu, A. E., 144
- Likins, Garland E.**
see Rausche, Frank, 255
- Lin, Jhun-Sou**
see Gould, Phillip L., 207
- Lin, Jon**
Seismic Response of Light Subsystems on Inelastic Structures, 495
- Lin, Tzyy Shan**
Reliability of Ductile Systems with Random Strengths, 551
- Linden, M. P.**
see Behr, R. A., 536
- Lindsey, Stanley D.**
see Ionnides, Socrates A., 878
- Lipkin, Joel**
see Dawson, Paul R., 129
- Liu, H.**
Cherepnov Water Lifter: Theory and Experiment, 374
- Liu, Kwang-Liang**
see Bažant, Zdeněk P., 541
- Liu, Philip L.-F.**
Numerical Prediction of Wave Transformation, 815
Wave-Induced Pressure under Gravity Structure, 765
- Liu, Wu, Chung-Shang**, 786
- Liu, S. C.**
see Samali, B., 606
- Liu, X. L.**
Reinforced Concrete Pipe Columns: Behavior and Design, 10
- Liu, Xila**
Construction Load Analysis for Concrete Structures, 535
- Liu, Yow-Chyun**
see Huang, Ju-Chang, 71
- Lock, John D.**
see Gowda, T. P. Halappa, 97
- Loehr, Raymond C.**
Land Treatment of Wastes: Concepts and General Design, 57
- Loganathan, Vasudevan G.**
Planning Detention Storage for Stormwater Management, 751
- Loh, C. Lawrence**
see Weaver, William, Jr., 632
- Losada, Miguel A.**
see Corniere, Miguel A., 768
- Loulakis, Michael C.**
see Thompson, James A., 902
- Loveall, Clellon L.**
Jointless Bridge Decks, 945
- Lowry, Jerry D.**
Removal of Radon from Water Supplies, 83
- Ludwick, John C.**
see Timpy, David L., 791
- Lukens, Robert J.**
see Kuo, Albert Y., 790
- Lund, Jay R.**

- see Palmer, Richard N., 752
- Luthy, Richard G.**
see Banz, Iris, 69
- Lyman, Tracy J.**
Heavy Oil Mining—An Overview, 666
- Lynn, Brian A.**
Wind-Induced Fatigue on Low Metal Buildings, 522
- Maaskant, R.**
The Stability of Cylindrical Air-Supported Structures, 220
- Macaitis, Bill**
Managing Productivity During an Attrition Program, 451
- Macak, Joseph J., III.**
see Haas, Charles N., 85
- McBean, E. A.**
see Ellis, J. H., 56, 100
- McBean, Edward A.**
see Burn, Donald H., 336
see Dandy, Graeme C., 727
- McBean, Robert P.**
Wind Load Effects on Flat Plate Solar Collectors, 491
- McCall, Deborah J.**
see Walski, Thomas M., 61
- McCartney, Bruce L.**
Deep-Draft Navigation Project Design, 759
Floating Breakwater Design, 778
- McConnell, Daniel R.**
Earned Value Technique for Performance Measurements, 454
- McCorquodale, John A.**
see Hannoura, A'Alim A., 811, 812
- McCuen, Richard H.**
One Plus One Makes Thirty, 118
- McCutcheon, William J.**
Racking Deformations in Wood Shear Walls, 486
- McDonnell, Archie J.**
see Warwick, John J., 74, 75
- McDonough, James F.**
A Common Sense Approach to the Fundamentals Exam, 123
- The Microcomputer in C.E. Education: A Survey, 665
- McDougal, William G.**
see Leach, Patrick A., 818
- McFillen, James M.**
see Maloney, William F., 21
- McGartland, M.**
Expert Systems for Construction Project Monitoring, 39
- McGuire, William**
see Pesquera, Carlos I., 645
- Machemehl, Jerry L., ed.**
- see Bennett, F. Lawrence, d, 960
- MacKenzie, Mary C.**
see Palmer, Richard N., 757
- McKinney, James**
see Koehn, Enno, 114
- McKittrick, Harold V., ed.**
see Del Re, Robert, ed., 1009
- McLaughlin, John**
Land Information Management: A Canadian Perspective, 657
- McMahon, Donald R.**
Monitoring Saves a Site, 873
- McNally, Michael G.**
see Recker, Wilfred W., 678
- McNary, W. Scott**
Mechanics of Masonry in Compression, 524
- McVay, Michael**
Cyclic Behavior of Pavement Base Materials, 234
- Madsen, Henrik O.**
Extreme-Value Statistics for Nonlinear Stress Combination, 194
- Madsen, Stanley H.**
How Do Engineers Learn to Manage?, 846
- Madureira, Claudio J.**
see Garga, Vinod K., 288
- Magoon, Orville T., ed.**
Coastal Zone '85, 961
- Mahin, Stephen A.**
Pseudodynamic Method for Seismic Performance Testing, 562
- see Lin, Jon, 495
- see Popov, Egor P., 611
- Mahmassani, Hani S.**
Transportation Requirements for High Technology Industrial Development, 703
- Mahmood, Khalid**
see Haque, Muhammad I., 318
- Maison, Bruce F.**
Dynamic Analysis of a Forty-Four Story Building, 567
- Maiti, Surjya**
Rammed Earth House Construction, 306
- Majcherek, Hanna**
Modeling of Flow Velocity Using Weirs, 320
Submerged Weirs, 326
- Makigami, Yasuji**
An Analytical Method of Traffic Flow Using Aerial Photographs, 697
- Males, Richard M.**
Algorithm for Mixing Problems in Water Systems, 329
- see Clark, Robert M., 755
- Malhotra, Sundershan K.**
see Thomas, Babu, 532
- Maloney, William F.**

AUTHOR INDEX

Mizuno

- Valence of and Satisfaction with Job Outcomes, 21
- Mamoulouk, Michael S.**
see Sebaaly, Boutros, 714
- Manandhar, Shyam K.**
see Tingsanchali, Tawatchai, 343
- Mandal, Jnanendra**
see Maiti, Surjya, 306
- Manger, Katherine A.**
see Ritter, William F., 432
- Manolis, George D.**
see Emad, Kayumars, 142
- Mariño, Miguel A.**
see Holzapfel, Eduardo A., 439
- Marino, Miguel A.**
see Volker, Raymond E., 357
- Markert, Charles P.**
see Bell, Lansford C., 687
- Marks, George V., ed.**
Organization and Management of Public Transport Projects, 1000
- Marmoush, Yehia R.**
Acceleration Techniques for Coupled Nonlinear PDE's, 183
- Martin, Geoffrey R.**
see Crouse, C. B., 277
- Martin, John B.**
see Resende, Luis, 176
- Martin, Scott C.**
Dissolved Oxygen Model for a Dynamic Reservoir, 91
- Masliyah, Jacob H.**
Body-Fitted Coordinates for Flow under Sluice Gates, 372
- Mason, Peter J.**
Free Jet Scour Below Dams and Flip Buckets, 330
- Massey, Dean T.**
Exporting Colorado Water in Coal Slurry Pipelines, 739
- Mathis, Michael J., ed.**
see Dinchak, William G., ed., 1024
- Matsuizawa, Hiroshi**
Dynamic Soil and Water Pressures of Submerged Soils, 297
- Mattar, Samir G.**
Segmental Post-Tensioned Dolphin at Tagrin Point, 15
- Maynard, Andrea Sklarew**
see Harris, Steven C., 916
- Mayne, Paul W.**
Stress Anisotropy Effects on Clay Strength, 254
- Mays, Larry W.**
see Bennett, Michael S., 732
- Medina, Josep R.**
Distortions Associated with Random Sea Simulators, 800
- Medwadowski, Stefan J.**
Warping Moment Distribution, 498
- Mehra, Ashish J.**
see Parchure, Trimbak M., 398
- Mel, Chiang C.**
Gravity Effects in Consolidation of Layer of Soft Soil, 188
- Scattering of Solitary Wave at Abrupt Junction, 779
- Meloy, Glenn R., ed.**
Innovative Powerhouse Designs, 989
- Mendis, Priyantha A.**
see Darvall, Peter LeP., 525
- Menier, P. C.**
see Bear, Jacob, 4
- Mentrasti, Lando**
see Dezi, Luigino, 639
- Mercer, James W.**
Modeling Ground-Water Flow at Love Canal, New York, 16
- Mertz, Dennis R.**
see Fisher, John W., 865
- Mesri, Gholamreza**
Settlement Analysis of Embankments on Soft Clays, 259
- Michalopoulos, Alex P.**
see Georgiadis, Michael, 272
- Michelis, Paul**
Polyaxial Yielding of Granular Rock, 189
- Middlebrooks, E. Joe**
see Zirscky, J., 98
- Mikes, Wesley F.**
see O'Brien, James J., 25
- Milkowski, Wladislaw**
Catalytic Modification of Road Asphalt by Polyethylene, 671
- Miller, Barbara A.**
Analysis and Simulation of Low Flow Hydraulics, 408
- Miller, Robert D.**
Drainage Tunnels Save Freeway Link, 915
- Miner, Dallas, ed.**
see Magoun, Orville T., ed., 961
- Minor, J. E.**
see Behr, R. A., 536
- Minor, Joseph E.**
see Vallabhan, C. V. Girija, 623
- Mitchell, James K.**
Performance of a Stone Column Foundation, 247
- Mizunuma, Kazumasa**
Estimation of Hydraulic Data by Spline Functions, 392
- Prediction of Combined Snowmelt and Rainfall Runoff, 327
- Mizuno, Eiji**
see Sugiyama, Kunitomo, 178

- Moehle, Jack P.**
Confinement Effectiveness of Crossties in RC, 602
Lateral Load Response of Flat-Plate Frame, 605
- Mohan, Satish**
Multi-Attribute Utility in Pavement Rehabilitation Decisions, 701
- Molinas, Albert**
Generalized Water Surface Profile Computations, 340
- Monasa, Frank**
see Abdel-Sayed, George, 600, 601
- Montgomery, Raymond L., ed.**
Dredging and Dredged Material Disposal, 975
- Moore, Ian D.**
Analytical Theory for Buried Tube Postbuckling, 181
- Moore, James E.**
Statistical Designation of Traffic Control Subareas, 684
- Morgan, J. R.**
see Nelson, J. K., 595
- Morgan, Joe Miller**
see Walski, Thomas M., 61
- Morisako, Kiyetaka**
see Ishida, Shuze, 151
- Moran, Terry H., ed.**
Energy Forecasting, 977
- Morris, Glenn A.**
Tubular Steel Trusses with Cropped Webs, 553
- Morrison, Denby G.**
Dynamic Lateral-Load Tests of R/C Column-Slabs, 514
- Moses, F., ed.**
see Yao, James T. P., ed., 1018
- Moses, Fred**
see Ghosh, Michel, 192
see Nyman, William E., 548
- Mosquera, J. M.**
Impact Tests on Frames and Elastic-Plastic Solutions, 213
- Muggeridge, D. B.**
see Arockiasamy, M., 667
- Mulinazzi, Thomas E.**
see Chadda, Himmat S., 707
- Munfakh, George**
Wharf Stands on Stone Columns, 834
- Murphy, G. J.**
San Francisco Outfall: The Champ?, 952
- Murphy, Peter J.**
Bed Load or Suspended Load, 321
- Equilibrium Boundary Condition for Suspension, 322**
- Murray, Louis C., Jr.**
Phosphogypsum Waste Anion Removal by Soil Minerals, 93
- Murthy, B. R. Srinivasa**
see Nagaraj, T. S., 284
- Murti, Viriyawan**
Stress Intensity Factor Using Quarter Point Element, 138
- Murty, Tad S.**
Influence of Marginal Ice Cover on Storm Surges, 780
- Muscolino, Giuseppe**
see Di Paola, Mario, 598
- Muslu, Yilmaz**
see Uyumaz, Ali, 325
- Muspratt, Murray A.**
Ethics of Professionalism, 125
- Issues in Engineering Education, 120**
- Myint, Kyaw**
Design and Construction of Dade County METROMOVER, 725
- Naaman, A. E.**
see Harajli, M. H., 570
- Nadaskay, Anthony J.**
Direct Model Test of Stub Girder Floor System, 563
- Nagai, Toshihiko**
see Figueroa, Ludwig, 240
- Nagaraj, T. S.**
Compressibility of Partly Saturated Soils, 284
- Nagaya, Kosuke**
Response of Variable Cross-Sectional Members to Waves, 781
- Nair, V. D.**
see Kumar, A., 485
- Nakamoto, Reginald T.**
Investigation of Wind Effects on a Tall Guyed Tower, 616
- Nakamura, Tsuneyoshi**
Optimum Building Design for Forced-Mode Compliance, 197
- Nakayama, Tomoaki**
Strength of Resin Mortar Tunnel, 225
- Nalini, V. N.**
see Chakrabarti, A., 216
- Nandakumar, K.**
see Masliyah, Jacob H., 372
- Nandakumar, V.**
see Ahuja, Hira N., 41
- Narayanan, Rangachari**
Design of Slender Webs Having Rectangular Holes, 519
- Effect of Support Conditions on Plate Strengths, 480**
- Narayanan, Rangaswami**
see Hassan, N. M. K. Nik, 403
- Nash, Andrew B.**
see Furth, Peter G., 689

AUTHOR INDEX

Olivieri

- Nash, William R.
Raise Boring in Civil and Mining Applications, 18
see Braun, Bernd, 837
- Nath, John H.
see Teng, Chung-Chu, 827
- Nath, Y.
Orthotropic Annular Shells on Elastic Foundations, 203
- Nels, Vernon V.
New Constitutive Law for Equal Leg Fillet Welds, 580
- Nelson, Erik L.
Structural Behavior of Wood Shear Wall Assemblies, 512
- Nelson, J. K.
Hurricane Damage on Galveston's West Beach, 595
- Nelson, James K.
Indicator of Residential Roof Strength in Wind, 599
- Nelson, Mark C.
see Diekmann, James E., 22
- Nessim, Maher A.
Models for Human Error in Structural Reliability, 554
- Neumann, Edward S., ed.
Automated People Movers: Engineering and Management in Major Activity Centers, 957
- Neumann, Edward S.
Modern Material Ropeway Capabilities and Characteristics, 716
- Neureither, Matthias
see Gründig, Lother, 659
- Neuss, Carl F.
see Maisom, Bruce F., 567
- Nguyen, Van Uu
Determination of Critical Slope Failure Surfaces, 249
- Tender Evaluation by Fuzzy Sets, 35
- Nicholson, Peter L.
Soil Nailing Supports Excavation, 859
- Nicks, A. D.
see Williams, J. R., 375
- Nielson, Kris R.
Second-Guessing the Engineer, 939
- Nishida, Susumu
Ultimate Load Behavior of Beams with Initial Imperfections, 550
- Nishimura, Tatsuya
see Ikeda, Syunsuke, 405
- Nix, Stephen J.
Residence Time in Stormwater Detention Basins, 55
- Niyogi, Sanat K.
Fiber Reinforced Beams Under Moment and Shear, 503
- Noel, Leon
What Do Pavements Cost?, 944
- Nogami, Toyoaki
Beam on Generalized Two-Parameter Foundation, 165
- Nolan, William A.
see Simiu, Emil, 529
- Noll, K. E.
Adsorption of Organic Vapors on Carbon and Resin, 81
- Nomura, Yoshihiko
Pipe Jacking Method for Long Curve Construction, 28
- Noonan, David C.
see Wood, Duncan W., 753
- Noori, M. N.
see Baber, Thomas T., 186
- Noritake, Michihiko
Congestion Cost and Pricing of Seaports, 782
- Norup, Willy
Harmonizing Organizational and Personal Needs, 467
- Nowak, Andrzej S.
Sensitivity Analysis for Structural Errors, 579
- Nyman, William E.
Calibration of Bridge Fatigue Design Model, 548
- O'Brien, James J.
Cost Engineering for Disputed Work, 914
- Network Scheduling Variations for Repetitive Work, 25
- Quality Control: A Neglected Factor, 843
- O'Connor, Colin
Impact Studies on Small Composite Girder Bridge, 511
- O'Connor, James T.
Impacts of Constructability Improvement, 46
- O'Day, James
Large Trucks in Urban Areas: A Safety Problem?, 692
- O'Donnell, James C.
Changing Jobs Successfully, 835
- Oglesby, Clarkson H.
Consistency in Design for Low-Volume Rural Roads, 705
- Oh, Byung H.
see Bazant, Zdenek P., 159
- Oh, Im Sang
Numerical Study of Finite Amplitude Wave Refraction, 763
- Okafor, Hilary O.
see Perry, Simon H., 489
- Okumura, Toshie
see Yamamoto, Kazuyuki, 631
- Okura, Izumi
see Iwasaki, Masata, 693
- Olivieri, Adam
Ground-Water Contamination in Silicon Valley, 749

- Olivieri, Adam W.
see Eisenberg, Don M., 76
- Olkin, Ingram
see Simiu, Emil, 529
- Olyniec, James H., ed.
Transition in the Nuclear Industry, 1020
- O'Melia, Charles R.
Particles, Pretreatment, and Performance in Water Filtration, 105
- O'Neill, Michael W.
see Nogami, Toyoshi, 165
- Oppenheim, I. J.
see Allen, R. H., 557
- O'Rourke, Michael J.
Drift Snow Loads on Multilevel Roofs, 488
- O'Rourke, Thomas D.
see Trautmann, Charles H., 292, 293
- O'Rourke, Tom D.
Pipe Laying Comes Out of the Trenches, 949
- Orringer, Oscar, ed.
see Tong, Pin, ed., 984
- O'Shaughnessy, James C., ed.
Environmental Engineering, 980
- Osmolski, Zbig
see Ponce, Victor Miguel, 393
- Ossenbruggen, Paul J.
Time Series Models for Treatment of Surface Waters, 51
- Oster, J. D.
Chemical Reactions within Root Zone of Arid Zone Soils, 430
- Ouellette, Pierre
Application of Extreme Value Theory to Flood Damage, 756
- Oversch, Michael R.
see Loehr, Raymond C., 57
- Owen, Austin A.
Concrete Armor Unit Form Inventory, 808
- Owens, Emmet M.
see Effler, Steven W., 101
- Oxygen Transfer Standards Committee of The American Society of Civil Engineers
A Standard for the Measurement of Oxygen Transfer in Clean Water, 1013
- Pacal, Rudy M.
see Greenberg, Maurice S., 681
- Padron, Dennis V.
Pier Review, 921
- Page, Adrian W.
see Dhanasekar, M., 539
- Page, John H.
Planning Development with Transit Projects, 717
- Palmer, Dennis E.
A Tale of Six Cities, 866
- Palmer, Richard N.
Multi-Objective Analysis with Subjective Information, 752
- Optimization of Water Quality Monitoring Networks, 757
- Panahi, Zahra
Power Production and Air Conditioning by Solar Ponds, 228
- Panchang, Vijay G.
see Pearce, Bryan R., 801
- Pande, Pramod K.
see Asawa, Girdhari, L., 359
- Pandit, Ganpat S.
see Venkappa, Velpula, 483
- Pant, Prahlad D.
see Bhalla, Manmohan K., 674
- Papadrakakis, Manolis
Inelastic Cyclic Analysis of Imperfect Columns, 546
- Papo, Haim B.
Relative Error Analysis of Geodetic Networks, 660
- Parchure, Trimbak M.
Erosion of Soft Cohesive Sediment Deposits, 398
- Paris, W. C. Pete
see Grimm, Dan, 924
- Park, Young-Ji
Seismic Damage Analysis of Reinforced Concrete Buildings, 517
- Mechanistic Seismic Damage Model for Reinforced Concrete, 516
- Partheniades, Emmanuel
see Dermisis, Vassilios, 807
- Pasche, Erik
Overbank Flow with Vegetatively Roughened Flood Plains, 395
- Pashanasangi, Sasan
see Harik, Issam E., 564
- Patel, H. S.
see Knight, D. W., 317
- Patrick, Dale I.
see Corbitt, Robert A., 858
- Patton-Mallory, Marcia
Light-Frame Shear Wall Length and Opening Effects, 610
- Paudyal, Guna Nidhi
see Gupta, Ashim Das, 438
- Paulson, Boyd C., Jr.
Automation and Robotics for Construction, 32
- Pavlovic, Milija N.
On the Computation of Slab Effective Widths, 493
- Peacock, Robert T.
see Cassidy, John J., 341
- Pearce, Bryan R.
A Method for Investigation of Steady State Wave Spectra in Bays, 801
- Pecknold, D. A.

AUTHOR INDEX

Prinos

- Snap-Through and Bifurcation in a Simple Structure, 179
Peirce, J. Jeffrey
see Everett, Jess, 233
see Stessel, Richard I., 102
see Stessel, Richard Ian, 111
Pekau, O. A.
Torsional Instability in Hysteretic Structures, 156
Pekoz, Teoman
see Yener, Muzaffer, 543, 544
Pendleton, Dave L.
Telecommunications Access to National Geodetic Survey Integrated Data Base, 647
Perander, Donald R.
see Corbitt, Robert A., 858
Perdikaris, Philip C.
Extensional Stiffness of Precracked R/C Panels, 501
Shear Modulus of Precracked R/C Panels, 487
Perez, Teodoro
see Krizek, Raymond J., 282
Perlack, Robert D.
Multi-Objective Decision-Making in Waste Disposal Planning, 73
Perlin, Marc
3-D Model of Bathymetric Response to Structures, 769
Perry, Simon H.
Collapse of Square PSC Slabs with Corner Restraint, 489
Pesquera, Carlos I.
Functions for Relating Steel-Sections Properties, 645
Peters, John C.
see Schoellhamer, David H., 384
Petersen, Michael R.
Evapotranspiration of Small Conifers, 441
Peterson, Allan W.
see Steffler, P. M., 323
see Steffler, Peter M., 369
Peterson, Mark
see Lagasse, Peter F., 720
Petroski, H. J.
Plastic Response of Cantilevers with Stable Cracks, 175
Petroski, Henry
Learning From Failure, 840
Pettegrew, Lori
see Eisenberg, Don M., 76
see Olivieri, Adam, 749
Phillips, David K.
3R Standards Implementation, 677
Piper, Edwin M.
see Lyman, Tracy J., 666
Pister, Karl S.
see Austin, Mark A., 643
Podgórski, Jerzy
General Failure Criterion for Isotropic Media, 137
Polprasert, Chongrak
Dispersion Model for Waste Stabilization Ponds, 52
Polyzois, Dimos
Z-Section Girts Under Negative Loading, 504
Ponce, Victor Miguel
Kinematic Shock: Sensitivity Analysis, 353
Large Basin Deterministic Hydrology: A Case Study, 393
Ponce-Campos, C. David
Drag of Oscillatory Waves on Spheres in a Permeable Bottom, 761
Popov, Egor P.
Inelastic Response of Tubular Steel Offshore Towers, 611
Porter, Max L.
Analysis of Two-Way Acting Composite Slabs, 470
Ports, Michael A.
Computer Keeps New Orleans: Head Above Water, 911
Potter, John C.
Effects of Vehicles on Buried, High-Pressure Pipe, 685
Poulin, Thomas A., ed.
Avoiding Contract Disputes, 958
Poulos, Steve J.
Liquefaction Evaluation Procedure, 275
Liquefaction Resistance of Thickened Tailings, 310
see Castro, Gonzalo, 294
Poulton, Steven M.
see Pavlovic, Milija N., 493
Powers, J. Patrick, ed.
Dewatering—Avoiding Its Unwanted Side Effects, 974
Prakash, Indu
Solution of Base Stability Analysis in Layered Soils, 291
Pramone, Eddy
see Torkamani, Morteza A. M., 521
Pranesh, M. R.
Wave Load-Submarine Pipeline-Seafloor Interaction, 686
Prapaharan, S.
Moisture Curve of Compacted Clay: Mercury Intrusion Method, 296
Prasad, Shyam N.
see Azia, Nadim M., 399
Prevost, Jean H.
Nonlinear Dynamic Analyses of an Earth Dam, 281
Prevost, Jean-Hervé
Nonlinear Hysteretic Dynamic Response of Soil Systems, 167
Prinos, Panagiotis
Structure of Turbulence in Compound Channel

- Flows, 394
Pritchard, Ross W.
see O'Connor, Colin, 511
Pronovost, Paul M.
see Wood, Duncan W., 753
Qin, Bosheng
Effective Length of Luffing Jibs, 630
Rabbat, B. G.
Friction Coefficient of Steel on Concrete or Grout, 502
Rackwitz, R.
Reliability of Systems under Renewal Pulse Loading, 198
Rae, M. V. J.
see Ramamurthy, A. S., 417
Rahmeyer, William
Control Valve Flow Coefficients, 695
Rai, S. P.
Numerical Determination of Aquifer Constants, 386
Rajapakse, R. K. N. D.
Elastostatic Infinite Elements for Layered Half Spaces, 196
Rajaratnam, Nallamuthu
see Berry, Brent A., 339
see Steffler, P. M., 323
see Steffler, Peter M., 369
Ramamurthy, A. S.
Free Flow Discharge Characteristics of Throatless Flumes, 417
Ramesh, Narayanan
see Tumay, Mehmet T., 246
Ramirez, Henry M.
see Sabet, M. Hossein, 740
Randie, Paul A.
Selecting the Correct Retirement Plan for Your Business, 455
Ranjan, Gopal
see Rao, B. Govind, 303
Rao, B. Govind
Settlement Analysis of Skirted Granular Piles, 303
Rao, Koganti Mohana
Buckling Analysis of FRP-Faced Anisotropic Cylindrical Sandwich Panel, 157
Rasdorf, William J.
Computer Programming in the Civil Engineering Curriculum, 124
Rashed, Ahmed A.
Dynamic Analysis of Short-Length Gravity Dams, 190
Raudkivi, Arved J.
Scour at Cylindrical Bridge Piers in Armored Beds, 360
Rausche, Frank
Dynamic Determination of Pile Capacity, 255
Rawnsley, Robert P.
- see Abbott, Eldon L., 948
Ray, Gordon, K.
New Pavement from Old Concrete, 872
Rayej, M.
Furrow Irrigation Simulation Time Reduction, 424
Razzaq, Zia
Imperfect Columns with Biaxial Partial Restraints, 518
Read, William E.
Lower Mississippi Valley Floods of 1982 and 1983, 754
Recker, Wilfred W.
Flyovers and High Flow Arterial Concept, 678
Reddell, Donald L.
see Khaleel, Raz, 416
Reddy, D. V.
see Arockiasamy, M., 667
Redl, William A., ed.
Noise and Vibration Measurement: Prediction and Mitigation, 998
Reed, D. A.
Glass Strength Degradation under Fluctuating Loads, 560
Reed, George L.
Coping with Litigation, 882
Reiffel, Michael D.
see Verner, Edward A., 704
Reinato, Robert J.
Irrigation Scheduling Using Crop Indicators, 423
Reinforced Concrete Research Council
Probabilistic Basis for Design Criteria in Reinforced Concrete, 1001
Reinschmidt, A. J.
see Leschinsky, Dov, 304
Resende, Luis
Formulation of Drucker-Prager Cap Model, 176
Ressler, Marcy E.
see Rubin, Robert A., 857
Rhoades, J. D.
Salt Problems from Increased Irrigation Efficiency, 431
Richards, William G.
see Walski, Thomas M., 61
Richardson, E. V.
see Richardson, J. R., 388
Richardson, J. R.
Inflow Seepage Influence on Straight Alluvial Channels, 388
Richardson, Paul
Blind Drilling Down Under, 913
Riley, J. Paul
see Hargreaves, G. Leo, 422, 435
Ringwald, Richard C.
Formwork Design, 45

AUTHOR INDEX

Sandvik

- Ritter, William F.
Effect of Irrigation Efficiencies on Nitrogen Leaching Losses, 432
- Roberts, Benjamin R.
see Chen, Yung Hai, 333
- Roberts, Paul V.
External Mass-Transfer Rate in Fixed-Bed Adsorption, 106
- Roberts, Philip J. W.
see Chin, David A., 316, 822
- Roberts, R. G.
see Sawhney, P. S., 230
- Robertson, Peter K.
Liquefaction Potential of Sands Using the CPT, 256
- Robinsky, Eli I.
see Poulos, Steve J., 310
- Robinson, Michael C.
see Read, William E., 754
- Robison, Rita
Engineering with Fabric, 950
The Hybrid Arena, 849
Lift Bridge looks Like Sculpture, 861
Micros Go Afieid, 839
Mixed Use, Mixed Materials, 850
New Cables for Old, 925
New Safety for Old Dams, 923
New Ways with Concrete, 868
Putting CADD to Work, 929
Romanesque Reused, 918
Saving the Lady, 832
The Tunnel That Transformed Philadelphia, 886
Tunneling a Bridge, 937
see Becker, Roger J., 885
- Roche, W. Martin
Two Projects Became One, 912
- Roeder, Charles W., ed.
Composite and Mixed Construction, 962
- Roeder, Charles W.
see Assadi, Mahyar, 217
- Roessett, Jose M.
see Al-Sulaimani, Ghazi J., 635
- Rogala, Ryszard
Hydrodynamic Pressures Acting Upon Hinged-Arc Gates, 352
- Rolston, Dennis E.
see Volker, Raymond E., 357
- Roorda, J.
see Maaskant, R., 220
- Root, Gregory S.
see Recker, Wilfred W., 678
- Rose, Don
Tunnel Shotcreting—Strength in Fibers, 953
- Ross, Timothy J.
Impulsive Direct Shear Failure in RC Slabs, 574
Timoshenko Beams with Rotational End Con-
- straints, 150
- Rossmiller, Ronald I.
Water Management for Small Urbanizing Watershed, 733
- Roth, Richard A.
see Kavazanjian, Edward, Jr., 237
- Rotter, J. M.
Rapid Exact Inelastic Biaxial Bending Analysis, 638
- Rounds, Jerald L.
Total Quality Management for Construction, 26
- Rouphail, Nagui M.
Minimum-Cost Design of Flexible Pavements, 683
- Rousselle, Jean
see Ouellette, Pierre, 756
- Rouve, G.
see Pasche, Erik, 395
- Rowe, Michael D.
NO_x Exposure from Vehicles and Gas Stoves, 718
- Rowe, R. Kerry
1-D Pollutant Migration in Soils of Finite Depth, 261
- Reinforced Embankments: Analysis and Design, 3
- Rubin, Robert A.
Shop Drawing Review: Minimizing the Risks, 857
- Ruff, James F.
see Abt, Steven R., 401
- Russell, H. G.
see Rabbat, B. G., 502
- Ruth, Byron E.
Predicting Sinkhole Collapse, 943
- Ryu, Yeon S.
Review of Nonlinear FE Methods with Substructures, 212
- Sabbah, Mostafa A.
see Chaudhry, M. Hanif, 383
- Sabet, M. Hossein
Optimal Operation of California Aqueduct, 740
- Sabnis, Gajanan M.
see Krayterman, Boris, 164
- Sadid, Habib
see Jerath, Sukhvarsh, 161
- Sahli, Adnan H.
see Wattar, Fateh, 547
- Sakamoto, Hamao
see Makigami, Yasuji, 697
- Salamonowicz, Paul H.
Terrain Profiling Using Seasat Radar Altimeter, 661
- Samali, B.
Active Control of Seismic-Excited Buildings, 606
Control of Lateral-Torsional Motion of Wind-Excited Buildings, 172
- Samaras, Elias
ARMA Representation of Random Processes, 152
- Sandvik, Arne

- Proportional Weirs for Stormwater Pond Outlets, 853
- Sangrey, Dwight A.
see Warszawski, Abraham, 37
- Sapountzakis, E. J.
see Katsikadelis, J. T., 200
- Saul, William E.
see Tuan, Christopher Y., 496
- Saunders, K. G.
see Young, G. K., 86
- Sawan, Jihad
see Abdel-Rohamn, Mohamed, 569
- Sawhney, P. S.
Containments for Limerick and Susquehanna Plants, 230
- Sayles, Francis H., ed.
see Wuori, Albert, ed., 983
- Scanlan, Robert H.
see Abdel-Ghaffar, Ahmed M., 153, 154
- Schall, James D.
see Lagasse, Peter F., 720
- Schenk, Richard W.
Configuration Management as Applied to Engineering Projects, 462
- Schexnayder, Cliff J.
see Stewart, Rita F., 24
- Schoellhamer, David H.
Subdivision Froude Number, 384
- Schonfeld, Paul
Optimal Berth and Crane Combinations in Containerports, 829
- Schonfeld, Paul M.
see Chadda, Himmat S., 668
- Schreyer, Howard L.
Third-Invariant Model for Rate-Dependent Soils, 245
- Third-Variant Plasticity Theory for Low-Strength Concrete, 158
- Schrock, B. Jay
Solutions in the Pipeline, 919
- Schröder, D. C.
see Craver, W., Jr., 121
- Schuring, John R.
see Konon, Walter, 33
- Schwab, Richard E.
see Miller, Robert D., 915
- Scott, Ronald F.
Plasticity and Constitutive Relations in Soil Mechanics, 265
- Sebaaly, Boutros
Dynamics of Falling Weight Deflectometer, 714
- Seed, H. Bolton
The Influence of SPT Procedures in Soil Liquefaction Resistance Evaluations, 313
see Arulmoli, Kendiah, 239
- Seeley, John C.
Carbon Columns: Success at Last, 842
- Segarra, Rafael I.
see Loganathan, Vasudevan G., 751
- Sehayek, Lily
see Demetracopoulos, Alexander C., 84
- Seibel, Robert F.
see Freehling, Dan J., 650
- Selig, Ernest T., ed.
see Gazetas, George, ed., 1023
- Sen, Ashish
Examining Air Travel Demand Using Time Series Data, 679
- Sen, Rajan
see Davies, Trevor G., 309
- Sen, Zekai
Volumetric Approach to Type Curves in Leaky Aquifers, 345
- Seneviratne, Priyanka N.
Acceptable Walking Distances in Central Areas, 696
- Seo, Seung, Nam
see Kobayashi, Nobuhisa, 371
- Sepulveda, Abdon
see Cassis, Juan H., 568
- Sessions, Meredith H.
see Seymour, Richard J., 784
- Seymour, Richard J.
Automated Remote Recording and Analysis of Coastal Data, 784
- Episodicity in Longshore Sediment Transport, 794
- Threshold Effects on Sediment Transport by Waves, 783
- Shafer, Richard A.
see Cullinane, M. John, Jr., 877
- Shah, Arvind H.
see Wong, Ken C., 139
- Shah, G. H.
see Sawhney, P. S., 230
- Shah, Surendra P.
see Jenq, Y. S., 202
- see Suaris, Wimal, 506
- Shalev, Z.
MDS Project—Main Dimensions and Economics, 232
- Shanmugam, Nandivaram E.
see Balendra, Thambirajah, 559
- see Swaddiwudhipong, Somsak, 575
- Sharafeldien, Osama
see Schonfeld, Paul, 829
- Sharan, Shailendra K.
Finite Element Modeling of Infinite Reservoirs, 218
- Sharifounnasab, Mohsen
Rate of Shear Effects on Vane Shear Strength, 241
- Sharma, Anil M.

AUTHOR INDEX

Staffensen

- see Singh, Mahendra P., 214, 625
- Sharp, B. B.**
Economics of Pumping and the Utilization Factor, 404
- Sharp, James J.**
Scaling the Weight of Breakwater Armor Units, 798
- Shen, C. K.**
Microcomputer Based Free Torsional Vibration Test, 287
- Shen, Hsieh Wen**
see Wang, Sany-yi, 348
- Sheppard, Edmund M.**
Local Area Networks, 654
- Sherard, James L.**
Filters for Silts and Clays, 9
- Sherard, James L., ed.**
see Cooke, J. Barry, ed., 964
- Sherblom, John**
BITNET: Inter-University Computer Network, 653
- Shiba, Sadataka**
Flow under Tilt Surface for High-Rate Settling, 67
- Shing, Pui-shun B.**
see Mahin, Stephen A., 562
- Shinozuka, Masanobu**
see Samaras, Elias, 152
- Shiomi, Hiroshi**
see Nomura, Yoshihiko, 28
- Short, Ian**
see Bullock, Geoffrey N., 771
- Shukla, J. H.**
CPM Harnesses Mammoth Powerplant Job, 836
- Silberg, Steen**
see Fredsoe, Jorgen, 828
- Silka, Lyle R.**
see Mercer, James W., 16
- Simiu, Emil**
Multivariate Distributions of Directional Wind Speeds, 529
- Simon, Jesse**
Generating a Bus Route O-D Matrix From On-Off Data, 712
- Sinal, Gideon**
see Jain, Pramod Kumar, 443
- Singer, Philip C.**
see Cole, Anne I., 82
- Singh, Mahendra P.**
Floor Spectra for Nonclassically Damped Structures, 625
- Seismic Floor Spectra by Mode Acceleration Approach, 214
- Sinniger, R.**
see Hager, W. H., 418
- Skinner, John V.**
see Hubbell, David W., 358
- Smallowitz, Howard**
Hydropower's Newest Generation, 909
- Opportunity Knocks from Behind Bars, 879
- Project Management on a Micro, 931
- Reshaping the Future of Plastic Buildings, 867
- Smallowitz, Howard N.**
The High-Tech Civils, 928
- Smedema, Lambert K.**
Drainage Coefficients for Heavy Land, 421
- Smirnoff, Timothy P.**
see Miller, Robert D., 915
- Smith, Alan A.**
see Marmoush, Yehia R., 183
- Smith, Erling A.**
Behavior of Columns with Pretensioned Stays, 531
- Smoots, Vernon A.**
see Greenberg, Maurice S., 681
- Smutzer, Dave**
see Ponce, Victor Miguel, 393
- Snow, Charles H.**
Statistical Analysis of Specification Compliance, 690
- Solari, Giovanni**
Mathematical Model to Predict 3-D Wind Loading on Building, 141
- Sollitt, Charles K.**
see Leach, Patrick A., 818
- Soltis, Lawrence A.**
see Tarpy, Thomas S., Jr., 533
- Somanatha, G. S.**
see Pranesh, M. R., 686
- Somayaji, Shan**
Composite Beam Design Using Interaction Diagram, 528
- Song, Charles C. S.**
see Huang, Jingxiang, 412
- Sorenson, Robert M.**
Stepped Spillway Hydraulic Model Investigation, 410
- Southgate, Howard N.**
A Harbor Ray Model of Wave Refraction-Difraction, 760
- Speck, Robert S., Jr.**
see O'Rourke, Michael J., 488
- Spencer, B. F., Jr.**
On the Reliability of a Simple Hysteretic System, 221
- Spiegelman, Clifford H.**
see Simiu, Emil, 529
- Springer, Floyd M., Jr.**
Streambank Stability, 267
- Sridharan, Srinivasan**
Interactive Buckling in Thin-Walled Beam-COLUMNS, 219
- Staffensen, R. W.**

- see Shukla, J. H., 836
- Stahl, Bernhard**
see Knapp, Alphia E., 573
- Stanbro, W. D.**
see Aggour, M. S., 231
- Stansfield, Robert C.**
see Davis, Edward C., 95
- Stathopoulos, Theodore**
see Lynn, Brian A., 522
- Stefan, H.**
see Akiyama, J., 411
- Steffler, P. M.**
LDA Measurements in Open Channel, 323
- Steffler, Peter M.**
Water Surface at Change of Channel Curvature, 369
- Steger, Joseph A.**
Engineers as Managers, 456
- Stelzer, David**
see Papo, Haim B., 660
- Stephenson, Roger V.**
Performance of Surface Rotors in an Oxidation Ditch, 54
- Stessel, Richard I.**
Separation of Solid Waste With Pulsed Airflow, 102
- Stessel, Richard Ian**
Demoresearch for Resource and Energy Recovery, 111
- Stevens, Herbert H.**
see Hubbell, David W., 358
- Stewart, Rita F.**
Production Estimating for Draglines, 24
- Stewart, William**
Temperature Effects on Volume Measurements, 242
- Stiefel, Ulrich**
see O'Rourke, Michael J., 488
- Stiemer, Siegfried F.**
see Forde, Bruce, 29
- Stoll, R. D.**
Expanded Shale Lightweight Fill: Geotechnical Properties, 290
- Stover, Enos L.**
Making Treatment Plants Work, 856
- Street, R. L.**
see Koseff, J. R., 337
- Strelkoff, Theodor**
Dimensionless Formulation of Furrow Irrigation, 444
- Strijsma, Nico**
Prediction of 2-D Bed Topography in Rivers, 391
- Stubbs, Norris, ed.**
Damage Mechanics and Continuum Modeling, 970
- Stukhart, George, ed.**
Construction QA/QC Systems that Work: Case Studies, 967
- Sturm, Terry W.**
Simplified Design of Contractions in Supercritical Flow, 370
- Suaris, Wimal**
Constitutive Model for Loading of Concrete, 506
- The Subcommittee on High-Speed Rail Systems of the Committee on Public Transport of the Urban Transportation Division
High-Speed Rail Systems in the United States, 673
- Subcommittee on Vibration Problems Associated with Flexural Members on Transit Systems, Committee on Flexural Members of the Committee on Metals of the Structural Division
Dynamics of Steel Elevated Guideways—An Overview, 588
- Sues, Robert H.**
Stochastic Evaluation of Seismic Structural Performance, 545
- Sugimoto, H.**
Inelastic Post-Buckling Behavior of Tubular Members, 593
- Sugiura, Kunitomo**
Dynamic Instability Analyses of Axially Impacted Columns, 178
- Suidan, Makram T.**
Unified Analysis of Biofilm Kinetics, 90
- see Baskin, Don E., 50
- see Wang, Yi-Tin, 79
- Summers, R. Scott**
see Roberts, Paul V., 106
- Sun, Chang-Ning**
Testing of Cement-Mortar Lined Carbon Steel Pipes, 669
- Swaddiwudhipong, Somsak**
Fiber-Reinforced Concrete Deep Beams with Openings, 575
- Swamidas, A. S. J.**
see Arockiasamy, M., 667
- Sweazy, Robert M.**
Can We Save the Ogallala?, 906
- Syamal, Pradip K.**
see Pekau, O. A., 156
- Symonds, P. S.**
see Mosquera, J. M., 213
- Tadanier, Roman**
Soil Security Test for Water Retaining Structures, 500
- Tadjbakhsh, Iraj G.**
see Constantinou, Michalakis C., 515, 642
- Tadros, Maher K.**
see Ghali, Amin, 586
- Taesiri, Yonguth**
see McVay, Michael, 234
- Taigbenu, A. E.**
Boundary Element Calculations of Diffusion Equation, 144

AUTHOR INDEX

Tingsanchali

- Takahashi, Shigeo
see Yamamoto, Tokuo, 762
- Takatsuka, Toshio
see Nakayama, Tomoaki, 225
- Takewaki, Izuru
see Nakamura, Tsuneyoshi, 197
- Talbot, James R.
see Sherard, James L., 9
- Tallin, Andrew
Wind Induced Lateral-Torsional Motion of Buildings, 608
- Talling, Andrew
see Ellingwood, Bruce, 476
- Tanji, K. K.
see Oster, J. D., 430
- Tarkoy, Peter J.
Portables Pay Off, 932
- Tarpy, Thomas S., Jr.
Continuous Timber Diaphragms, 533
- Tarquin, A. J.
see Craver, W., Jr., 121
- Tart, Rupert G., Jr., ed.
see Krzewinski, Thomas G., ed., 1019
- Task Committee on Design of Outlet Control Structures**
Stormwater Detention Outlet Control Structures, 1015
- Task Committee on Federal Policies in Water Resources Planning of the Management Resources Planning and Management Division of the American Society of Civil Engineers**
Federal Policies in Water Resources Planning, 981
- Task Committee on Properties of Selected Plastics Systems of the Structural Plastics Research Council of the Technical Council on Research of The American Society of Civil Engineers**
Structural Plastics Selection Manual, 1017
- Task Committee on Quantifying Land-Use Change Effects of the Watershed Management and Surface-Water Committees of the Irrigation and Drainage Division**
Evaluation of Hydrologic Models Used to Quantify Major Land-Use Change Effects, 413
- The Task Committee on Redundancy of Flexural Systems of the ASCE-AASHTO Committee on Flexural Members of the Committee on Metals of the Structural Division**
State-of-the-Art Report on Redundant Bridge Systems, 629
- Task Committee on Revision of Construction Cost Control Manual of the Construction Division of the American Society of Civil Engineers**
Construction Cost Control, 966
- Task Committee on the Application of Small Computers in Construction**
Application of Small Computers in Construction, 31
- Task Committee on Updating Manual 42 of the Committee on Dynamic Effects of the Structural**
Division of the American Society of Civil Engineers
Design of Structures to Resist Nuclear Weapons Effects, 971
- Tassoulas, John L.
see Gazetas, George, 274
- Tatom, Frank B.
Errors from Using Conservation of Buoyancy Concept in Plume Computations, 377
- Tavakoli, Amir
Productivity Analysis of Construction Operations, 19
- Tavoularis, Stavros
see Prinos, Panagiotis, 394
- Tayel, Magdy A.
see Haroun, Medhat A., 145, 146
- Taylor, Charles M.
see Emanuel, Jack H., 520
- Taylor, Michael A.
Direct Biaxial Design of Columns, 479
- Taylor, Peter K.
Current Research and Research Needs in Deep Foundations, 969
- Tchobanoglou, George
see Weber, A. Scott, 94
- Teicholz, Paul M., ed.
Making Project Control Systems Work, 992
- Teng, Chung-Chu
Forces on Horizontal Cylinder Towed in Waves, 827
- Thomas, Babu
Behavior of Timber Joints with Multiple Nails, 532
- Thomas, David J.
see Tarpy, Thomas S., Jr., 533
- Thomas, Wilbert O., Jr.
A Uniform Technique for Flood Frequency Analysis, 747
- Thompson, Christopher David
Real and Apparent Relaxation of Driven Piles, 248
- Thompson, David Elliot
see Thompson, Christopher David, 248
- Thompson, Edward F.
Significant Wave Height for Shallow Water Design, 814
- Thompson, James A.
Hazardous Waste: Closing the Insurance Gap, 902
- Thorne, Colin R.
Estimating Mean Velocity in Mountain Rivers, 354
- Thornton, Edward B.
see Guza, R. T., 774
- Timp, David L.
Bore Height Measurement with Improved Wave-staff, 791
- Tingsanchali, Tawatchai
Analytical Diffusion Model for Flood Routing, 343

- Tirella, O. C.**
Negotiating Contracts, 941
- Tittlebaum, Marty E.**
see White, Kevin D., 58
- Titus, Martin F.**
see Ahrens, John P., 767
- Tobin, L. Thomas, ed.**
see Magoon, Orville T., ed., 961
- Todd, David A.**
Stream Dissolved Oxygen Analysis and Control, 70
- Toft, Graham S.**
User-Pay Funding and Creative Capital Financing, 113
- see** Mahmassani, Hani S., 703
- Tokimatsu, K.**
see Seed, H. Bolton, 313
- Tong, Pin, ed.**
Fracture Problems in the Transportation Industry, 984
- Torkamani, Morteza A. M.**
Dynamic Response of Tall Building to Wind Excitation, 521
- Torno, Harry C., ed.**
Computer Applications in Water Resources, 963
- Townsend, Frank C.**
Geotechnical Characteristics of Residual Soils, 238
- Townsend, Ron**
see Prinos, Panagiotis, 394
- Trautmann, Charles H.**
Lateral Force-Displacement Response of Buried Pipe, 293
- Uplift Force-Displacement Response of Buried Pipe, 292
- Trout, Thomas C.**
see Humphreys, Allan S., 420
- Trowbridge, John H.**
see Adams, E. Eric, 823
- Tsay, Huel-Sheng**
see Fricker, Jon D., 698
- Tsay, Ting-Kwei**
see Liu, Philip L.-F., 815
- Tsurui, Akira**
see Samaras, Elias, 152
- Tu, C. V.**
see Ellen, C. H., 615
- Tuan, Hang**
Finite Water Depth Effects on Nonlinear Waves, 785
- Tuan, Christopher Y.**
Loads Due to Spectator Movements, 496
- Tucker, Richard L.**
see Grimm, Clayford T., 597
- Tumay, Mehmet T.**
Flow Field Around Cones in Steady Penetration, 246
- Tumi, Hadi**
see Valid, Voginder P., 301
- Tung, C. C.**
Force Spectrum of Horizontal Member, 209
- Tung, Yeou-Koung**
Channel Scouring Potential Using Logistic Analysis, 328
- River Flood Routing by Nonlinear Muskingum Method, 409
- Tyler, J. Stuart**
see Hargroves, Bradley T., 708
- Ugwu, Maxwell**
see Hinze, Jimmie, 465
- Ulrich, C. Robert**
see Sharifounnasab, Mohsen, 241
see Springer, Floyd M., Jr., 267
- Umezawa, Takao**
see Nomura, Yoshihiko, 28
- Usuki, Seizo**
see Hasebe, Kaoru, 131
- Uyumaz, Ali**
Flow Over Side Weirs in Circular Channels, 325
- Uzan, Jacob**
Extension of CBR Method to Highway Pavements, 710
- Valid, Voginder P.**
Confining Pressure, Grain Angularity, and Liquidfaction, 301
- Vallabhan, C. V. G.**
see Behr, R. A., 536
- Vallabhan, C. V. Girija**
Thin Glass Plates on Elastic Supports, 623
- Valliappan, Somasundaram**
see Murti, Viriyawan, 138
- van der Kuur, P.**
Locks with Devices to Reduce Salt Intrusion, 826
- van Rijn, Leo C.**
see Alfrink, Ben J., 6
- Vansant, Robert E.**
Liability: Attitudes and Procedures, 468
- Vedula, Subrahmanyam**
Bed Shear From Velocity Profiles: A New Approach, 324
- Vegt, E.**
see Kranenburg, C., 711
- Veillette, John R.**
Eccentrically Loaded High Strength Bolted Connections, 534
- Veletos, Anestis S.**
Dynamic Analysis of Structures by the DFT Method, 636
- Venkappa, Velpula**
Torsion of Concrete Beams with Large Openings, 483
- Ventura, Carlos E.**

AUTHOR INDEX

Watanabe

- see Veletsos, Anestis S., 636
Verma, A.
see Petroski, H. J., 175
Verner, Edward A.
Collapse of Thick Wall Pipe in Ultra Deep Water, 704
Vesilind, P. Aarne
see Endy, Elizabeth M., 954
Vestroni, Fabrizio
see Capecchi, Danilo, 222
Vick, Steven, G.
Risk Analysis for Seismic Design of Tailings Dams, 283
Vincens, Guillermo J.
see Bras, Rafael L., 362
Vincent, C. L.
see Thompson, Edward F., 814
Vincent, Charles L.
Depth-Controlled Wave Height, 789
Wind Wave Growth in Shallow Water, 810
Vinogradov, A. M.
Nonlinear Effects in Creep Buckling Analysis of Columns, 170
Vinson, Ted S.
Latent Heat of Frozen Saline Coarse-Grained Soil, 266
Violette, Susan
see Abikowitz, Mark, 706
Vogt, Judith F.
see Lesley, Kenneth, 466
Volkart, Peter U.
Automatic Throttle Hose—New Flow Regulator, 434
Volker, Raymond E.
Transition Zone Width in Ground Water on Ocean Atolls, 357
Volpe, Richard L., ed.
Seepage and Leakage from Dams and Impoundments, 1011
Vongvisessomjai, Suphat
Regime of Oscillatory Flow, 764
Voyatzis, G. Z.
Effects of Shear and Normal Strain on Plate Bending, 195
Voyatzis, George Z.
see Kiousis, P. K., 205
Wadlin, George K.
1984 Civil Engineering Educators Salary Survey, 122
Civil Engineering and Engineering Enrollments, 116
Wadlin, George K., Jr., ed.
Challenges to Civil Engineering Educators and Practitioners—Where Should We Be Going?, 959
Waldrop, William R., ed.
Hydraulics and Hydrology in the Small Computer Age, 987
Walker, William R.
Water Resources Engineering Education, 748
Wall, John F., Jr.
Managing Construction of Israeli Air Bases in Negev—A Personal Perspective, 469
Wallender, Wesley W.
see Rayje, M., 424
Wallis, Ian G.
see Hinwood, Jon B., 366
Wallis, James R.
Relative Accuracy of Log Pearson III Procedures, 380
Walsh, Thomas M.
Calculating Effectiveness of Water Conservation Measures, 61
Cleaning and Lining Versus Parallel Mains, 728
Correction of Head Loss Measurements in Water Mains, 672
Wan, Zhaohui
Bed Material Movement in Hyperconcentrated Flow, 376
Wang, Bob Yao-Ting
see Vallabhan, C. V. Girija, 623
Wang, C. Y.
Symmetric Buckling of Hinged Ring Under External Pressure, 215
Wang, M. C.
Effect of Underground Void on Foundation Stability, 289
Wang, Sany-yi
Incipient Sediment Motion and Riprap Design, 348
Wang, Shen
see Le Mehaute, Bernard, 820
Wang, Yi-Tin
Performance of Expanded-Bed Mathenogenic Reactor, 79
see Suidan, Makram T., 90
Wang, Zhan K.
see Wu, Han C., 204
Ward, George H., Jr.
Marsh Enhancement by Freshwater Diversion, 726
Ward, Tim J., ed.
see Keyes, Conrad G., Jr., ed., 972
Ward, Timothy J., ed.
see Jones, E. Bruce, ed., 1025
Warszawski, Abraham
Robotics in Building Construction, 37
Warwick, John J.
Nitrogen Accountability for Fertile Streams, 75
Simultaneous In-Stream Nitrogen and D.O. Balancing, 74
Washington, Francis N.
Role of Telecommunications in Timekeeping, 651
Watanabe, Noboru
see Hayashikawa, Toshiro, 163
Water Quality Committee of the Irrigation and

- Drainage Division**
- Report of Task Committee on Water Quality Problems Resulting from Increasing Irrigation Efficiency, 428
- Wattar, Fateh**
End-Bolted Cover Plates, 547
- Watwood, Vernon B.**
Gable Frame Design Considerations, 566
- Weaver, William, Jr.**
Dynamics of Trusses by Component-Mode Method, 632
- Weber, A. Scott**
Nitrification in Water Hyacinth Treatment Systems, 94
- Wechsler, Marius B.**
Moment Determination for Moving Load Systems, 556
- Wehrman, Paul J.**
see Males, Richard M., 329
- Welda, David E.**
Managing the Transition to CADD, 457
- Wekezer, Jerzy W.**
Instability of Thin Walled Bars, 180
- Welby, Charles W.**
Inventorying Ground Water in Crystalline Rocks of Piedmont Region, 745
- Welch, Christopher S.**
see Kuo, Albert Y., 790
- Welshans, Gary K.**
Solid Waste Management for Utility Reconversions, 229
- Wen, Robert K.**
Stiffness Matrices of Symmetric Structures, 571
- Wen, Y. K.**
see Park, Young-Ji, 517
- Wen, Yi-Kwei**
see Sues, Robert H., 545
- Wenzel, Harry G.**
see Miller, Barbara A., 408
- Wheat, Dan L.**
see Nelson, Erik L., 512
- Whipple, William, Jr.**
State Water Supply Management in New Jersey, 744
- White, Kevin D.**
Metal Distribution and Contamination in Sediments, 58
- White, Richard N.**
see Perdikaris, Philip C., 487, 501
- Whitman, Robert V.**
see Lambe, Philip C., 250
- Wibby, Richard J.**
Portland Cement Concrete Thin-Bonded Overlay, 38
- Wickersheimer, David J.**
Repair Technique for Buckled Wood Truss Mem-
- bers, 530
- Wiggert, David C.**
see Hamilton, David A., 315
- Wilhoite, Gene M.**
see Gaylord, Edwin H., 584
- Wilkinson, D. L.**
Seawater Circulation in Sewage Outfall Tunnels, 367
- Wilkinson, Ronald W.**
Plastic Lining on Riverton Unit, Wyoming, 437
- Willardson, L. S.**
Basin-Wide Impacts of Irrigation Efficiency, 433
- Williams, Anthony N.**
Wave Forces on an Elliptic Cylinder, 787
- Williams, J. R.**
Wave Forces on Inclined Circular Cylinder, 819
- Williams, J. R.**
Simulator for Water Resources in Rural Basins, 375
- Williams, Neil D.**
see Houston, Sandra L., 302
- Williams, P. J., ed.**
see Anderson, Duwayne M., ed., 985
- Willis, Cleve E.**
see Perlack, Robert D., 73
- Willis, Joe C.**
Near-Bed Velocity Distribution, 361
- Wilmot, Charles I.**
see Vick, Steven G., 283
- Wilson, Frank R.**
Mathematical Programming for Highway Project Analysis, 680
- Wilson, George E.**
Is There Grit in Your Sludge?, 864
- Wilson, John H.**
see Curney, Donald P., 933
- Wilson, Michael D.**
see Humphreys, Allan S., 420
- Windingland, Diane**
see Ponce, Victor Miguel, 353
- Winter, C. Victor**
see Kosut, Gary M., 590
- Winter, Jan**
see Rogala, Ryszard, 352
- Winterstein, Steven R.**
Energy Fluctuation Scale and Diffusion Models, 133
- Non-Normal Responses and Fatigue Damage, 206
- Wirojanagud, Prakob**
Saltwater Upconing in Unconfined Aquifers, 342
- Witkowski, James M.**
Methods Used to Evaluate Highway Improvements, 2
- Wiuff, Rasmus**
Transport of Suspended Material in Open Submerged Streams, 363

AUTHOR INDEX

Yun

- Wium, Daniel J. W.
Variability in Long-Term Concrete Deformations, 583
- Wlosinski, Joseph H.
Flux Use for Calibrating and Validating Models, 66
- Wolde-Tinseae, Amde M.
see Yang, Pe-Shen, 235
- Wolfe, Ronald W.
see Patton-Mallory, Marcia, 610
- Wong, Chung K.
see Stewart, William, 242
- Wong, Felix S.
Slope Reliability and Response Surface Method, 236
see Ross, Timothy J., 150
- Wong, Ken C.
Dynamic Stresses and Displacements in a Buried Tunnel, 139
- Wood, Duncan W.
Development of a Flood Management Plan, 753
- Wood, Eric F.
see Wallis, James R., 380
- Woods, Richard D., ed.
Measurement and Use of Shear Wave Velocity for Evaluating Dynamic Soil Properties, 994
- Richart Commemorative Lectures, 1007
- Woolcock, Scott T.
see Kitipornchai, Sritawat, 538
- Wormleaton, Peter Richard
Flow Distribution in Compound Channels, 338
- Wosiewicz, Bogdan
Drainage Due to Gravity under Nonlinear Law, 419
- WPCF Task Force on Financing & Charges
Financing and Charges for Wastewater Systems, 982
- Wright, David W.
Accounting for Every Pipe, 942
- Wright, Steven J.
see Hamilton, David A., 315
- Wu, Chung-Shang
Finite Element Modelling of Nonlinear Coastal Currents, 786
- Wu, Han C.
Endochronic Modeling of Sand in True Triaxial Test, 204
- Wu, Jin
Hydrodynamically Smooth Flows Over Surface Material in Alluvial Channels, 407
- Wuori, Albert, ed.
Foundations in Permafrost and Seasonal Frost, 983
- Xirouchakis, Paul C.
see Bhat, Shankaranarayana U., 174
- Yalin, Mahmet Selim
On the Determination of Ripple Geometry, 389
- Yamamoto, Kazuyuki
Elastic Analysis of Gusseted Truss Joints, 631
- Yamamoto, Tokuo
Wave Damping by Soil Motion, 762
see Figueroa, Ludwig, 240
- Yang, Bing-Lin
Bounding Surface Plasticity Model for Concrete, 147
- Yang, Chih Ted
see Molinas, Albert, 340
- Yang, J. N.
see Samali, B., 172, 606
- Yang, Pe-Shen
Effects of Predrilling and Layered Soils on Piles, 235
- Yang, Ren-Jye
Nonlinear Static and Dynamic Analysis of Plates, 136
- Yankelevsky, David Z.
New Finite Element for Bond-Slip Analysis, 565
- Yao, James T. P., ed.
Structural Safety Studies, 1018
- Yarmus, James J.
Establishing a Professional Practice, 463
- Yeh, C. T.
see Samali, B., 172
- Yeh, Gour-Tsyh
Subregion Iteration of Finite Element Method for Large-Field Problems of Ground-Water Solute Transport, 350
- Yeh, William W.-G.
see Braga, Benedito P. F., Jr., 741
- Yener, Muzaffer
Partial Moment Redistribution in Cold-Formed Steel, 544
- Partial Stress Redistribution in Cold-Formed Steel, 543
- Yim, Solomon C.-S.
Simplified Earthquake Analysis of Multistory Structures With Foundation Uplift, 641
see Chopra, Anil K., 527
- Yin, Beile
see Tung, C. C., 209
- Yitayew, Muluneh
Reuse System Design for Border Irrigation, 426
- Yoo, Kyung H.
Least-Cost Planning of Irrigation Systems, 442
- Yoshida, Koichiro
see Inui, Taiji, 618
- Young, G. K.
Phosphorus Reduction for Control of Algae, 86
- Yuen, W. Y. D.
see Ellen, C. H., 615
- Yun, Heedo
Model for Beam-Mode Buckling of Buried Pipelines, 140

Zagars, A., ed.

Hydropower: Recent Developments, 988

Zahn, John J.

Lateral Stability of Beams with Elastic End Restraints, 155

Zaman, M. M.

see Desai, C. S., 276

Zavelani, Adolfo

Design of Cold-Formed Latticed Transmission Towers, 624

Zetler, Bernard D.

Predicted Extreme High Tides for California: 1983-2000, 809

Zetlin, Lev

A Space Frame Forecast, 910

Zevenbergen, Adrain W.

see Hawkins, Richard H., 440

Zevenbergen, Lyle W.

see Thorne, Colin R., 354

Zhou, Shi-Ping

Design Criteria for Box Columns Under Biaxial Loading, 637

Zirschky, J.

Spatial Estimation of Hazardous Waste Site Data, 98

Zsutty, Theodore

Empirical Study of Bar Development Behavior, 482

